UPPER COOK INLET SALMON ESCAPEMENT STUDIES 1997

by

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF TABLES, continued

LIST OF TABLES, continued

LIST OF FIGURES

LIST OF APPENDIX TABLES

APPENDIX TABLE, continued

APPENDIX TABLES, continued

APPENDIX TABLES, continued

ABSTRACT

Sockeye salmon *Oncorhynchus nerka* spawning escapements into four river systems of Upper Cook Inlet, Alaska, were estimated using side-scanning sonar equipment. Estimated sockeye salmon escapements were 1,064,818 into the Kenai River, 266,025 into the Kasilof River, 70,768 into the Crescent River, and 157,822 into the Yentna River. Indices of escapements of other salmon species into the Yentna River were also obtained by sonar: 28,960 pink *O. gorbuscha*, 12,671 chum *O. keta*, and 13,670 coho *O. kitsutch* salmon. Sockeye salmon in the Kenai River were primarily distributed within two age classes: 1.3 (75.2%) and 2.3 (13.0%). Kasilof River sockeye salmon were primarily age: 1.2 (21.1%); 2.2 (13.5%); 1.3 (54.8%); and 2.2 (10.7%). Age-1.3 sockeye salmon were the most abundant (56.0%) age class in the Crescent River, followed by age classes 2.3 (26.6%) and 1.2 (10.6%). Yentna River sockeye salmon were primarily age: 1.3 (43.7%), 1.2 (32.4%), and 0.3 (10.5%). Length and sex ratio data were collected for sockeye salmon in each river. Sockeye salmon migration routes in all rivers were near shore. Hourly peak salmon counts were typically recorded during the late morning and afternoon in the Kenai River. The Kasilof River north bank hourly peak counts occurred in the afternoon and evening while hourly peak counts for the south bank occurred in the late morning and early afternoon. Peak hourly counts in the Crescent River were related to the post meridiem high tides. Peak hourly counts for the north bank of the Yentna River began at noon and continued through 2400 h. On the south bank most peak hourly counts occurred 2400 h - 0600 h with some peak hourly counts occurring during the afternoon hours.

KEY WORDS: Alaska, Cook Inlet, salmon, Kenai River, Kasilof River, Crescent River, Yentna River, Susitna River, age/sex/size, sonar, escapement enumeration.

INTRODUCTION

Prior to 1968, sockeye salmon escapement estimates in Upper Cook Inlet (UCI), Alaska (Figure 1) were based on surveys of clear water spawning areas and provided no information about the distribution or number of sockeye salmon which spawned in glacially occluded waters (King and Davis 1989). Commercial and recreational fishery management efforts were further hampered by lack of daily and cumulative estimates of escapement. These constraints were significantly reduced by the development of hydroacoustic techniques to enumerate sockeye salmon in some glacial tributaries of UCI. Hydroacoustic enumeration of escapement began on the Kenai and Kasilof Rivers in 1968, was expanded to the Susitna River in 1978 and to the Crescent River in 1980. The Susitna River counting site was abandoned in 1985, and counting operations began on the Yentna River, a major tributary of the Susitna River, in 1986. Results of escapement enumeration studies were documented by Waltemyer et al. (1980), Tarbox et al. (1981, 1983), King and Tarbox (1984, 1986, 1987, 1988, 1989a, 1990 and 1991), King (1990), King et al. (1989b, 1992), King and Davis (1989, 1992), Davis and King (1993, 1994, 1995, 1996 and 1997), Davis et al. (1993), and Namtvedt et al. (1979).

The program objectives of UCI escapement projects in 1997 were to estimate (1) the daily and cumulative number of sockeye salmon entering the Kenai, Kasilof, Crescent, and Yentna Rivers, and (2) the age, length, and sex composition of those escapements. Indices of abundance were also obtained for Yentna River pink, chum and coho salmon.

METHODS

Bendix Corporation[1] side-scanning sonar counters described by King and Tarbox (1989a), Gaudet (1983) and Bendix Corp. (1980 and 1984) were used to enumerate salmon escapements. Pulse width was 100 ms and the frequency was 515 Khz. Two- and four-degree transducer elements were multiplexed in an alternating mode. The counting threshold was preset at approximately -38 db by the manufacturer. However, tests with a standard target of –41dB typically saturated the counters, indicating the counting threshold to be lower than –38dB. The pulse repetition rate was variable. Counters were operated without artificial substrates in the Kenai, Crescent and Yentna Rivers. A technical consultant tested the counters for proper operation prior to deployment, and reinspected counters when migrating fish densities neared maximum levels in each river system (A. Menin, Hydroacoustic Consulting, Sylmar, CA).

Project operational dates were: 1 July through 25 August on the Kenai River; 14 June through 12 August on the Kasilof River; 24 June through 5 August on the Crescent River; and 6 July through

[1]Use of a company's name does not constitute product endorsement.

12 August on the Yentna River. Counting operations ceased when daily counts were < 1% of the cumulative count for 3 consecutive days, or when budgetary considerations mandated cessation of counting activities. Kenai and Kasilof River counting operation cessation criteria were not instituted until cessation of continuous commercial fishing.

Raw hourly output data were edited to account for debris, bottom echoes, or other sources of non-fish counts. Hourly sonar counts by day were entered into a data-base program which calculated a daily average hourly count for inshore (1-6) and offshore (7-12) sonar sectors by

$$Ca = Cb/N, \qquad (1)$$

where:

Ca = average count per sector per hour;
Cb = valid hourly counts for all inshore or offshore sectors; and
N = number of sector per hour units which contained only valid counts.

The average count was then substituted into any sector/hour block where counts were deleted through editing. Sonar counts collected from the north bank of the Crescent River received the same treatment but calculations were made manually and computer entry of data occurred post-season. The daily average hourly count for the south bank of the Crescent River was calculated for each sector by:

$$Cc = Cd/N, \qquad (2)$$

where:

Cc = average count per sector per hour for the Crescent River south bank;
Cd = valid Crescent River south bank hourly counts per sector; and
N = number of hour units per sector which contained only valid counts.

All counts recorded on the south bank at Crescent River occurred in sectors one (96.9 %) and two (3.1 %) of the counting range. Printer skips (treated as false counts) regularly occurred in sectors one through six. Hourly averages for each sector were substituted where skips occurred or counts were deleted. Because of the spacial distribution of fish migrating adjacent to this bank, the method used for the treatment of false counts provided a more accurate estimate of daily escapement because it did not place a high hourly average count derived from sector one or two into sectors where very few targets were detected. Both banks were treated in this manner at Crescent River.

Temporal and spacial behavior of sockeye salmon was assessed by examining distribution of fish by sector, hourly passage rate, bank preference, and cumulative proportion of sonar counts by day.

The ensonified area for the counter operated on the north bank of the Crescent River was 4.2 m to 5.0 m and for the south bank 21.3 m. The ensonified area for the north bank of the Kenai River was 11.0 m to 24.4 m and 7.10 m (except 18 August when counting distance was reduced to 6.4 m) for the south bank. An extended weir was erected on the north bank of the Kenai River enabling positioning of the transducer further from the bank. Ensonified areas at the Kasilof River ranged

from 10.4 m to 16.8 m on the north bank and 11.9 m to 16.8 m on the south bank. In the Yentna River, ensonified areas for the north bank were 9.5 m to 11.6 m. On the south bank fish were counted between 5.5 m and 14.0 m. Reported ranges encompassed the period when 80% (10%-90%) of the run occurred and the maximum counting range employed was used for descriptive purposes. Transducer distance from shore varied among systems and is not reflected in the reported counting range.

Transducer orientation was accomplished by remotely controlled rotators except on the Kasilof River and the south bank of the Kenai River. Correct orientation of the acoustic axis was tested periodically by the use of an artificial target. A sealed plastic sphere was weighted and moved through the ensonified area at various distances from the transducer. Simultaneous detection of the target by the counter and visual recognition on an oscilloscope verified correct axis orientation. Transducers were moved nearer shore as water depth increased. Fish passage between (behind) the transducers and the bank was prevented by the use of weirs.

Counters were generally monitored 0700-2400 h on the Kasilof, Crescent and Yentna Rivers, and throughout the 24-h period on the Kenai River. In addition to regularly scheduled monitoring, intensified monitoring was conducted during episodic fish passage. In all cases, visual counts from an oscilloscope were compared to the counts accumulated by the counter during a minimum 10-min period or for a minimum oscilloscope count of 100 fish. During periods of low density passage (<500 fish per hour), Kenai and Yentna River oscilloscope/counter observations were made at a minimum of 1 h per bank each day. When passage rates reached 500 fish per hour, minimum observation time increased to 2 h per bank per day. Kasilof and Crescent River counters were monitored for a minimum of 2 h per bank per day. If a relative error greater than 20% occurred between targets counted on the oscilloscope and targets recorded by the counter, counter adjustments were made to reduce the relative error. However, operators typically made adjustments to the counters to accommodate for less than 20% relative error. The basic counter adjustment consisted of changing the pulse repetition rate.

Information used to estimate species composition of sonar counts, and age, length, and sex composition of sockeye salmon escapements was obtained from salmon captured in fish wheels. Fish wheels were located on the north banks of the Kenai, Kasilof, and Crescent Rivers (1 at each site), and on both banks of the Yentna River. Fish wheels were operated 24 h per day at Crescent River, up to 24 h per day at Yentna River, and during daylight hours at the Kasilof Rivers. The Kenai River fish wheel was typically operated during evening hours when the passage rate and proximity to shore of migrating sockeye salmon maximized capture rate. The fish wheel was generally stopped when operators estimated the minimum sample size required to provide age, sex and length data had been attained. Fish wheel catches at the Yentna River site were expanded for each 24 h period based on the hourly catch rate during the hours of operation by

$$Fd = (Fh/H)\,24. \qquad (3)$$

where:

Fd = expanded fish wheel catch for 24 hours;
Fh = fish wheel catch for hours operated; and
H = hours fish wheel operated.

Prior to 13 August all sonar counts in the Kenai River were treated as sockeye salmon. Kasilof River sonar counts were treated as sockeye salmon. In the Yentna River, daily fish wheel catches were grouped into sample sizes of at least 150 salmon to apportion sonar counts. The fish wheel at Crescent River was operated for 24 h, so actual (not adjusted to 24 h) fish wheel catches were used to apportion sonar counts there. Because of their size and number, Dolly Varden char were included in sonar count apportionment at Crescent River.

Factors influencing the accuracy of escapement estimates for pink, coho, chum, and chinook salmon in the Yentna River were discussed by Tarbox et al. (1981, 1983). Counts apportioned to these species in 1997 were considered to be index counts.

Comparisons of Yentna River south bank fish wheel catch to south bank sonar counts indicated suspiciously high fish wheel efficiency for this bank. A second Bendix counter was deployed on this bank on 15 July for comparative purposes.

Sample sizes for estimating sockeye salmon age composition were based on methods for estimating multinomial proportions developed by Thompson (1987). Minimum sample sizes were calculated so that the estimated proportion of each major age class was within 5% of the true proportion 90% of the time. Previous years' age composition proportions were analyzed to determine adequate sample sizes for a variety of age class ratios. The largest sample size calculated in this manner was chosen as a minimum sample size for 1997. The minimum sample size was increased by 10% to account for unreadable scales, and this number was used as the total sample size required. Sockeye salmon scale samples were collected daily from the Kenai, Kasilof, Crescent, and Yentna Rivers. The number of salmon sampled for age composition per day was based on a percentage of the previous day's escapement count. These percentages were calculated by dividing the total season sample size by the anticipated total escapement.

Mid-eye to fork-of-tail length (mm) and sex were also recorded for all sockeye salmon sampled. Sex ratios and mean lengths were calculated by grouping all samples together regardless of type or timing of sampling. Age classes which were $\geq$ 10% of the total escapement in each river were included in the age and length composition tables.

A second Bendix side-scanning salmon counter was installed on the south bank of the Yentna River on 14 July. Hourly, simultaneous monitoring and calibration was conducted on both counters. Counts were recorded from 15 July through 12 August utilizing the secondary (or downstream) counter.

RESULTS

Kenai River

An estimated 1,064,818 sockeye salmon migrated past the Kenai River sonar site (Table 1) from 1 July through 25 August. The desired in-river goal range for this drainage is 550,000-825,000 sockeye salmon. The biological escapement goal (number of spawners) is 330,000-600,000 sockeye salmon. Historical estimates of sockeye salmon spawning escapement (sonar count minus sport harvest above the Soldotna Bridge) were made through 1996, but no estimate was made for 1997 (Table 2). A total of 56,053 sockeye salmon were passed at the Hidden Lake weir. The late-run Russian River sockeye salmon escapement totaled 77,242 fish (Table 3).

Eighty percent of the sockeye salmon escapement passed the sonar counters in 39 d (Table 4; mean=20 d; range for 1979-97 = 6-39 d). The midpoint of the escapement was 19 July. Peak counts occurred on 18 July when 84,110 targets were detected (Table 5). Sockeye salmon migration along the north bank of the river accounted for 56.0% of the total escapement (Table 6). There were three distinct peaks in the daily numbers of fish passing the counters (Figure 2).

Most (90.5%) of the salmon migration adjacent to the north bank was within 6.7 m of the transducer. Salmon distribution adjacent to the south bank was more shore oriented (Figure 3), with 90.8% of the counts within 2.9 m of the transducer.

Salmon passage by the north bank counter was nearly consistent, with mid-day observations only slightly exceeding the 4.2% for a constant passage rate over the 24-h period. Fish passage during the hours when fish passage exceeded the 4.2% per hour rate (0800-1600 h, 0100 h and 2400 h) accounted for 49.6% of the bank total (Figure 4,5). Fish passage measured 1000-1800 h and 2300 h adjacent to the south bank accounted for 46.7% of the bank total.

Actual fish wheel catch was 8,886 sockeye salmon (Table 7), from which 963 scale samples, sexes, and lengths were obtained. The largest component (75.2%) of the sockeye salmon escapement was age-1.3 fish, followed by -2.3 (13.0%) fish (Table 8). Mean length by sex was within historical bounds for age-1.3 fish and equaled the largest recorded for male age-2.3 fish. Female age-2.3 fish were within historical bounds (Table 9). The male-to-female ratios fell within historical bounds. Female spawners of the major age classes constituted 52.9 % of the total escapement.

Age-1.3 and -2.3 sockeye salmon were bound primarily for Quartz Creek, Tern Lake, the mainstem river, and the shorelines and outlets of Kenai and Skilak Lakes. Late-run sockeye salmon bound for Russian River (above the falls) were predominantly age-2.2 (44.2%), -2.3 (21.8%), and -2.1 (21.2%) fish (Athons 1997), while those bound for Hidden Lake were predominantly age 1.2 (Fandrei 1997).

Kasilof River

A total of 266,025 sockeye salmon were counted at the Kasilof River sonar site from 14 June through 12 August (Table 10). The desired escapement range for this system is 150,000-250,000 sockeye salmon. Brood stock for artificial propagation at the Crooked Creek Hatchery (8,289 fish) were taken from Bear Creek (Fandrei 1997, Table 11). The index area spawning escapement estimate for Bear Creek was 81,989 sockeye salmon (Table 12).

The midpoint of the sockeye salmon escapement occurred on 4 July, 9 d earlier than the mean for the previous 18 years (range 1-22 July; Table 13). Eighty percent of the escapement occurred in 49 d, 17 d greater than the historical mean (1979-96).

Fifty-nine percent of the salmon counts occurred on the south bank (Table 6). Spacial distribution adjacent to the north bank was near shore (Figure 6), where 86.1% of the salmon migrated within 6.1 m of the transducer. Fish passage on the south bank was less shore oriented (87.8% of the salmon passed within 11.8 m of the transducer).

The average hourly passage rate on the north bank exceeded the average for a consistent passage rate (4.2%) between 1400-2300 h. Targets detected during these hours accounted for 53.1% of the total. Passage rates higher than the consistent passage rate adjacent to the south bank occurred between 0500-1300 h. Salmon counted during these hours accounted for 46.2 % of the south bank total. Higher passage rates occurred on the north bank during the afternoon and evening hours (Figure 7). There were several peaks in daily passage of fish past the counting site (Figure 2), with a minor increase at the termination of the commercial fishery.

A total of 2,076 sockeye salmon were captured in the Kasilof River fish wheel (Table 14), of which 758 were sampled for age, length, and sex characteristics. Age-1.2 (21.1%), -2.2 (13.5%), -1.3 (54.8%) and -2.3 (10.7%) sockeye salmon were the predominant age classes (Table 15). Mean lengths for age -1.2 fish and for female 2.2 fish were the smallest on record. Male age -2.2 fish were the second smallest in the data set. Age -1.3 and -2.3 fish mean lengths were within the historical range (Table 16). Male-to-female ratios were within historical bounds. Female spawners comprised 48.7% of the escapement.

Crescent River

A total of 87,847 fish targets were counted at the Crescent River sonar site from 24 June through 5 August (Table 17). Sockeye salmon escapement was estimated to have been 70,768 fish or 80.6% of the total targets (Table 18). The desired sockeye salmon escapement goal for this system is 50,000 to 100,000 fish.

The midpoint of the sockeye salmon escapement occurred on 11 July, 6 d earlier than the date of the historical mean, and 80% of the escapement passed the site in 27 d (Table 19). The peak in daily passage occurred on 10 July (Figure 2). Run timing between banks was similar. Seventy nine percent of the fish migrated along the north bank (Table 6).

Spacial distribution of fish migrating adjacent to the south bank was strongly shore oriented, with 100.0% of the counts within 3.8 m of the transducer. North bank fish were slightly less shore oriented (Figure 8), with 100% of the north bank counts within 4.8 m of the transducer. Two peaks in the migration were observed (Figure 2). A greater than expected (4.2% of the daily total) passage rate occurred adjacent to the north bank from 1000-1100 h, at 1300 h, and from 1700-2400 h (Figure 5). Sonar counts during those hours were 58.8% of the bank total. On the south bank the highest hourly passage rates occurred between 1400-2100 h (Figure 9), accounting for 63.5% of the bank total.

The Crescent River fish wheel was operated 24 h per day and captured 1,575 sockeye salmon (Table 20), of which 640 were sampled for age, length, and sex data. Age-1.3 fish were the most abundant (56.0%), with other major components of the escapement represented by age-2.3 (26.6%), and -1.2 (10.6%; Table 21) fish. Age -2.3 fish were the largest to appear in the historical data set. Mean lengths by sex for age-1.3 and -1.2 fish were within historical bounds (Table 22). The ratios of male-to-female fish were at or near 1.0:1 for all age classes. The abundance of males for age class 1.2 fish was the lowest in the historical database. Females accounted for 48.3% of the total sockeye salmon escapement.

Crescent River hourly fish passage rates peaked during the afternoon and evening hours following high tides (Figure 10). The peak hour of fish passage on the south bank occurred after the post meridiem high tide on 30 of the 41 d of operation and on the north bank on 32 of the 41 d of the enumeration operation. Fish migration was apparently influenced more by other factors than the stage of the tide during the first few days of observations.

Yentna River

From 6 July through 12 August, 213,420 salmon were counted at the Yentna River sonar site, of which an estimated 157,822 were sockeye salmon (Table 23). The escapement goal range for the Yentna River is 100,000-150,000 sockeye salmon. Sonar counts apportioned to species other than sockeye salmon were: pink salmon, 28,960; coho salmon, 13,670; chum salmon, 12,671; and chinook salmon, 297 (Table 24). Estimates of coho and chinook salmon escapements for other tributaries of the Susitna River were also made (Table 25). No estimates for pink or chum salmon were available for the Susitna River above its confluence with the Yentna River.

The midpoint of the sockeye salmon escapement occurred on 24 July, the date of the historical mean. Eighty percent of the escapement passed the counters in 22 d (Table 26). Run timing was not appreciably different by bank. Eighty nine percent of the sockeye salmon migrated adjacent to the south bank (Table 6).

Salmon passage was shore oriented (Figure 11). Of the salmon counted from the south bank, 92.2% were within 3.29 m of the transducer. On the north bank, 92.9% of the salmon were counted within 5.18 m of the transducer.

Fish passage rates increased during afternoon and evening hours (Figure 12) adjacent to the north bank. The seasonal hourly passage rate on the north bank met or exceeded the average for a constant hourly passage rate (4.2%) at 0100 h, 1200-1300 h, and 1500-2400 h (Figure 5). Counts accumulated during these hours accounted for 65.5% of the north bank total. The percentage per hour for a constant hourly passage rate was exceeded predominantly in the late evening and early morning (0100-0600 h, 1600-1700 h, 2200 and 2400 h) on the south bank. Counts accumulated during these hours accounted for 45.5 % of the south bank total. There were two distinct peaks in the daily numbers of fish passing the counters (Figure 2).

A total of 7,725 sockeye salmon were captured in fish wheels at Yentna Station (Tables 27; 28), of which 534 were sampled for age, sex, and length data. The major components of the escapement were ages 1.3 (43.7%), 1.2 (32.4%), and 0.3 (10.5%; Table 29). Average lengths except age-0.3 fish were within the historical range. Age-0.3 fish had the largest recorded average length (1997 was the second year age-0.3 fish appeared in numbers sufficient to include that age class in the reported data. Male-to-female ratios for all age classes fell within historical bounds (Table 30). Female spawners composed 52.9% of the total sockeye salmon escapement.

Eighty percent of the pink salmon escapement occurred in 19 d, with the midpoint occurring on 29 July (Table 31). Pink salmon run duration (80%) in the Yentna River has ranged 9 to 21 d. Migratory timing has been remarkably consistent, with the midpoint occurring between 25 and 30 July in 15 of the 17 years for which data are available.

Comparisons of counts from the Yentna River primary south bank counting site (upstream counter) and the secondary counter (downstream counter) were made (Table 32). Linear regression analysis was used to evaluate the relationship between the upstream and downstream sonar counters. During the period when both counters were in use, the downstream counter counted 1.4 times the number of fish targets, on average, as the upstream counter ($r^2 = 0.43$, $P < 0.0001$). This relationship was used to adjust sonar counts obtained from 7 July (0100 hr) to 15 July (1200 hr) when only the upstream counter was operational (Stan Carlson, ADF&G, Soldotna, personal communication).

DISCUSSION

The 1997 field season and sonar counting operations were similar to past years. Counting conditions on all rivers were thought to be within design and operational tolerances of the Bendix side-scanning sonar system because; 1) salmon passage was inshore and near the bottom during the peak of the run; 2) salmon densities were generally adequate for system adjustment; and, 3) one species, sockeye salmon, composed most of the run except in the Yentna River (36.9%).

Kenai River

Species apportionment of sonar counts was discontinued in 1995 because we perceived a potential problem in the apportionment process. A disproportionate number of non-sockeye salmon species appeared in the fish wheel catch. Additionally, we consider the numbers of fish of other species as insignificant during the time sockeye salmon are being counted under normal run timing circumstances. Salmon species other than sockeye salmon composed 1.0% of the fish wheel catch in 1995 and 4.0% in 1996 (a pink salmon year). In 1997 protracted run timing caused extended counting operations, and species apportionment began on 13 August, resulting in 1.3% of the total fish targets being apportioned to species other than sockeye salmon. Counts of species other than sockeye salmon are of no value as index counts as extended run duration (coho salmon) and passage upstream outside the ensonified area (coho and chinook salmon) combine to limit the usefulness of these data.

Kasilof River

Run timing, counter limitations, and spawning locations relative to the sonar site made sonar escapement estimates for Kasilof River pink, coho, and chinook salmon impractical. Coho salmon entered the river primarily in August (G. Kyle, ADF&G, Soldotna, personal communication). The proportion of pink salmon was not known, but the average historical proportion of the pink salmon in the Kasilof River escapement is 1.9% (range 0.2-6.4%). Early- and late-run chinook salmon migrated past the sonar site during the time when sockeye were counted, but no counts were apportioned to this species. We believe that the ratio of sockeye salmon to chinook salmon captured in the fish wheel has been biased toward chinook salmon during the latter portion of the run, resulting in total chinook estimates that exceed the actual spawners passing the counting site. The error associated with apportionment of chinook salmon counts to sockeye salmon is more acceptable than an inflated chinook salmon estimate.

Crescent River

Prior to 1993, fish were collected for species composition with drifted gill nets and a fish trap. The installation of a fish wheel at Crescent River provided a larger sample size and probably reduced the degree of size selectivity inherent to the gear types formerly used. Dolly Varden char, which had not appeared in the catch in previous years, appeared in the fish wheel catch in 1993 (Davis and King 1994). We determined that the char captured at Crescent River were of adequate size to meet target detection thresholds of the counters and included them in the apportionment of daily sonar counts in 1993-95. We also concluded that these fish were migratory based on morphological characteristics and results of marking all Dolly Varden char captured in 1993-95. Of the Dolly Varden char marked in 1993-95, none were recaptured. The high proportion (18.6% or 548 fish) of char in the fish wheel catch in 1994 led us to believe that the sockeye salmon escapement may have historically been overestimated. The proportion of char in 1993 (0.5%) and 1995 (0.7%) may be more indicative of the degree of historical over apportionment to sockeye salmon than the high proportion observed in 1994 (Davis and King 1994, 1995). In 1996, 3,487 sonar counts were

apportioned to Dolly Varden char and chinook salmon, or 9.9% of the total. In 1997, 3,092 sonar counts were apportioned to Dolly Varden char and chinook salmon, or 3.5% of the total counts.

We concluded from the hourly passage rate that daily migration timing is probably related to tide stage. However, we have not observed a diurnal bimodal entry pattern into Crescent River, so some other as yet unidentified variable(s) must also be influencing fish migration at this site. We have been unable to correlate fluctuations in water level or temperature to fish entry patterns into Crescent River.

Yentna River

King and Tarbox (1990) indicated sockeye and pink salmon exhibited differential migratory behavior in the Yentna River. They found that sockeye salmon were proportionally higher in the fish wheel catch 1200-2400 h and pink salmon were more frequently captured 0600-1200 h. This observation identified a potential source of error in the use of total daily adjusted fish wheel catches to apportion sonar counts. To overcome this potential bias, fish wheels catches used to apportion sonar counts were collected by operating the fish wheels in 4 time blocks of 6 h each over a 24 h period in 1993 and 1994. We determined that the degree of bias did not justify the additional expense of operating the fish wheels in this manner, and this method of fish wheel operation was discontinued in 1995.

Fish wheel efficiency (fish wheel catch / sonar count) created suspicion that the south bank sonar counter may have been undercounting. The linear regression analysis counts for 7 – 15 July increased the daily escapement count for the south bank by 29.8% (6,487 counts). After 15 July the higher of the two sonar counts was used as daily escapement for the south bank. During this period higher counts were recorded by the upstream counter on 23 of 28 days. These counts were 21.3% higher than those recorded by the downstream counter. The adjusted counts generated for the 7 – 15 July period and the use of the greater of the two south bank counts resulted in an escapement estimate increased by 5.7 % for the season. Fish wheel efficiency appears to increase with lower densities of fish, but this relationship needs to be investigated further.

Enumeration activities ceased on the Yentna River on 7 August. Migratory timing information could not be calculated for chum and coho salmon because migration continued past that date. The range for 1981-84=69.8%-92.0% (mean 78.7%) of the chum salmon escapement and 79.6%-89.9% (mean 84.8%) of the coho salmon escapement was recorded by 12 August (King and Tarbox 1986).

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Table 1. Estimated sockeye salmon escapement recorded by side-scanning sonar in the Kenai, Kasilof, Crescent and Susitna Rivers 1978-1997.

	System			
Year	Kenai R.[a]	Kasilof R.[b]	Crescent R.	Susitna R.[c]
1978	398,900	116,600	[d]	94,400
1979	285,020	152,179	86,654	156,980
1980	464,038	187,154	90,863	190,866
1981	407,639	256,625	41,213	139,401[e] - 340,232
1982	619,831	180,239	58,957	215,856[f] - 265,332 113,847[e]
1983	630,340	210,271	92,122	112,314-175,936[g] 104,414[e]
1984	344,571	231,685	118,345	194,480[f] - 279,446[g] 149,375[e]
1985	502,820	505,049	128,628	107,124[e] - 227,924[g]
1986	501,157	275,963	20,385[h]	92,076[e]
1987	1,596,871	249,250	120,219	66,054[e]
1988	1,021,469	204,000[i]	57,716	52,330[e]
1989	1,599,959	158,206	71,064	96,269[e]
1990	659,520	144,136	52,238	140,290[e]
1991	647,597	238,269	44,578	109,632[e]
1992	994,798	184,178	58,229	66,074[e]
1993	813,617	149,939	37,556	141,694[e]
1994	1,003,446	205,117	30,355	128,032[e]
1995	630,447	204,935	52,311	121,220[e]
1996	797,847	249,944	28,729	90,660[e]
1997	1,064,818	266,025	70,768	157,822

[a] Includes counts after 22 June (1978-87) and after 1 July (1988-95).

[b] Includes counts or estimates prior to 15 June (1983-88) and post enumeration estimates (1981-86).

[c] Sonar counts from Susitna Station unless otherwise indicated.

[d] No counts conducted.

[e] Sonar counts from Yentna Station only.

[f] Sonar counts from Yentna Station and east bank of the Susitna River.

[g] Counts from Yentna Station and mark-recapture estimate from Sunshine Station.

[h] Counts through 16 July only.

[i] Combined counts from wiers on Bear and Glacier Flat Creeks and surveys of remaining spawning streams.

FN: HISTESC.XLS

Table 2. Late-run Kenai River sockeye salmon escapement summary 1968-1997.

Year	Estimated Escapement at Sonar Site[a]	Estimated Russian River Sport Harvest[b]	Estimated Kenai River Mainstem Sport Harvest[c]	Estimated Total Harvest Above Sonar Site[d]	Sonar Count Less Sport Harvest
1968	88,000	5,820			
1969	53,000	1,150			
1970	73,000	600			
1971	300,000	10,730			
1972	318,000	16,050			
1973	367,000	8,930			
1974	161,000	8,500	8,030	16,530	144,470
1975	142,000	8,390	5,110	13,500	128,500
1976	380,000	13,700	13,140	26,840	353,160
1977	708,000	27,440	16,933	44,373	663,627
1978	398,900	24,530	24,542	49,072	349,828
1979	285,020	26,840	12,328	39,168	245,852
1980	464,038	33,500	18,592	52,092	411,946
1981	407,639	23,720	14,450	38,170	369,469
1982	619,831	10,320	38,400	48,720	571,111
1983	630,340	16,000	48,310	64,310	566,030
1984	344,571	21,970	11,160	33,130	311,441
1985	502,820	58,410	42,272	100,682	402,138
1986	501,157	30,810	51,221	82,031	419,126
1987	1,596,871	40,575	155,799	196,374	1,400,497
1988	1,021,469	19,536	103,124	122,660	898,809
1989	1,599,959	55,210	165,340	220,550	1,379,409
1990	659,520	56,175	87,580	143,755	515,765
1991	647,597	31,449	108,271	139,720	507,877
1992	994,798	26,101	161,957	188,058	806,740
1993	813,617	26,772	60,306	87,078	726,539
1994	1,003,446	26,375	93,616	119,991	883,455
1995	630,447	11,986	98,651	110,637	519,810
1996	797,847	20,142	140,270	160,412	637,435
1997	1,064,818	17,635	105,049	122,684	942,134

[a] Bendix Corp. multiple transducer sonar 1968-1977, side-scanning sonar 1978-1997.
[b] Based on creel census data from Sport Fish Division, Soldotna.
[c] Sport Fish Division Statewide Harvest Estimate, above the Soldotna Bridge (and sonar site) only.
[d] Combined Russian River and mainstem (above bridge) harvests.
[e] Sonar count less sport harvest reduced by 77,060 fish harvested by dip net at Hidden Creek.

FN: ESCSUM.XLS

Table 3. Late-run sockeye salmon escapement counts in eight index areas, Kenai River drainage 1969-1997.

Year	Railroad Creek[b]	Johnson Creek[b]	Carter-Moose Creek[b]	Ptarmigan Creek[b]	Tern (Mud) Lake[b]	Quartz Creek[c]	Hidden Lake[d]	Russian River[a] Above Weir	Russian River[a] Below Weir	Total Index Area Escapement
1969	100	75	598	5	487	487	500	28,920	1,100	32,272
1970	99	118	348	7	561	200	323	28,200	220	30,076
1971	194	160	3,201	45	1,370	808	1,958	54,430	10,000	72,166
1972	700	150	3,400		1,200		4,956	79,000	6,000	95,406
1973	521	1,714	660	1,041	1,731	3,173	690	24,970	6,690	41,190
1974		46	939	558		255	1,150	24,650	2,210	29,808
1975	522	105	1,278	186	1,214	1,068	1,375	31,970	630	38,348
1976	1,032		5,558		1,548	3,372	4,860	31,950	3,470	51,790
1977	1,262	450	6,515	1,513	2,230	3,037	1,055	21,410	17,090	54,562
1978	1,749	780	1,933	3,529	1,126	10,627	4,647	32,760	18,330	75,481
1979		588	3,986	523	1,693	277	5,762	87,920	3,920	104,669
1980	1,259	253	4,879	5,752	2,575	7,982	27,448	83,980	3,220	137,348
1981	1,276	142	4,370	1,421	3,402	5,998	15,939	44,530	4,160	81,238
1982	2,518	498	4,752	7,525	4,300	70,540	8,648	30,790	45,000	174,571
1983	1,289	338	1,819	9,709		73,345	11,297	34,040	44,000	175,837
1984	2,090	939	5,927	18,000	2,728	37,659	27,792	92,660	3,000	190,795
1985	2,884	151	5,928	26,879			24,784	136,970	8,650	206,246
1986	600	245	1,659				17,530	40,420	6,022	66,476
1987	736	74	625	14,187		45,400	43,487	53,930	76,732	235,171
1988	1,990	1,243	1,607	31,696			50,907	42,480	28,840	158,763
1989	4,959	2,276	5,958	3,484			7,770	138,320	28,480	191,247
1990			2,306	3,230			77,959	83,336	11,760	178,591
1991			750 [e]	2,764 [e]	1,750 [f]		35,676	78,175	22,267	141,382
1992			1,106 [e]	3,147 [e]	970 [f]		32,912	63,478	4,980	106,593
1993							11,582	99,259	12,258	123,099
1994				1,204			6,086	122,277	15,211	144,778
1995						2,000 [g]	7,542	61,982	12,479	84,003
1996						4,181 [g]	55,526	34,691	31,601	121,818
1997						27,660 [g]	67,727	65,905	11,337	172,629

[a] 1969-75, ADF&G archives, Division of Sport Fish, Anchorage. 1976-97, Marsh, L., ADF&G, Division of Sport Fish, Soldotna.
[b] United States Department of Agriculture, Forest Service, Seward, Alaska (1984-92, 1994).
[c] FRED Division weir count (1982-83).
[d] Weir count: 1971, 1973, 1976-89 (FRED Division); 1990-96 (Cook Inlet Aquaculture Association).
[e] Carter-Moose Creek survey conducted on lower 1.0 mile of creek, Ptarmigan Creek survey conducted on lower 1.5 miles of creek (1991-1992, 1994).
[f] Survey conducted on an unnamed stream at eastern end of Tern (Mud) Lake.
[g] CFM&D ground survey

Table 4. Cumulative proportion by date of sockeye salmon counts recorded in the Kenai River 1979 - 1997.

	Cumulative Proportion[a]																		
Date	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
22-Jun	0.001	0.002	0.001	0.002	0.001	0.003	0.001	0.000	0.001										
23-Jun	0.003	0.004	0.001	0.003	0.001	0.007	0.002	0.002	0.002										
24-Jun	0.006	0.005	0.002	0.004	0.002	0.010	0.003	0.003	0.002										
25-Jun	0.008	0.006	0.003	0.004	0.003	0.012	0.004	0.003	0.002										
26-Jun	0.010	0.008	0.004	0.005	0.004	0.013	0.005	0.004	0.003										
27-Jun	0.012	0.008	0.006	0.006	0.005	0.015	0.006	0.004	0.004										
28-Jun	0.013	0.009	0.007	0.007	0.006	0.017	0.007	0.006	0.005										
29-Jun	0.015	0.010	0.008	0.007	0.006	0.018	0.009	0.006	0.006										
30-Jun	0.017	0.011	0.009	0.008	0.007	0.021	0.010	0.007	0.007										
01-Jul	0.019	0.012	0.010	0.009	0.007	0.023	0.014	0.008	0.007	0.000	0.000	0.001	0.001	0.003	0.004		0.000	0.001	0.003
02-Jul	0.020	0.013	0.012	0.010	0.008	0.024	0.016	0.009	0.008	0.000	0.001	0.001	0.003	0.005	0.010	0.000	0.001	0.002	0.008
03-Jul	0.023	0.014	0.012	0.011	0.008	0.025	0.017	0.010	0.008	0.001	0.001	0.003	0.004	0.008	0.013	0.001	0.001	0.003	0.014
04-Jul	0.025	0.015	0.013	0.011	0.009	0.027	0.019	0.011	0.008	0.001	0.001	0.010	0.005	0.010	0.019	0.001	0.002	0.005	0.021
05-Jul	0.030	0.016	0.013	0.012	0.009	0.029	0.021	0.012	0.009	0.001	0.002	0.019	0.012	0.011	0.037	0.002	0.003	0.007	0.029
06-Jul	0.050	0.016	0.014	0.012	0.009	0.031	0.024	0.013	0.009	0.002	0.006	0.029	0.018	0.014	0.058	0.003	0.007	0.010	0.034
07-Jul	0.067	0.017	0.016	0.013	0.010	0.032	0.026	0.014	0.009	0.003	0.011	0.036	0.019	0.015	0.061	0.007	0.011	0.012	0.037
08-Jul	0.077	0.017	0.018	0.013	0.010	0.036	0.030	0.014	0.010	0.003	0.014	0.044	0.020	0.016	0.067	0.011	0.013	0.017	0.044
09-Jul	0.082	0.018	0.064	0.015	0.011	0.044	0.032	0.015	0.010	0.003	0.017	0.049	0.022	0.018	0.081	0.013	0.016	0.019	0.047
10-Jul	0.086	0.018	0.186	0.016	0.013	0.054	0.033	0.015	0.010	0.011	0.021	0.050	0.024	0.020	0.085	0.016	0.019	0.021	0.068
11-Jul	0.089	0.019	0.262	0.016	0.017	0.063	0.036	0.015	0.010	0.063	0.024	0.052	0.028	0.022	0.087	0.019	0.021	0.025	0.117
12-Jul	0.092	0.020	0.366	0.017	0.021	0.067	0.038	0.016	0.011	0.088	0.046	0.054	0.034	0.043	0.092	0.021	0.023	0.029	0.171
13-Jul	0.095	0.020	0.463	0.019	0.041	0.071	0.039	0.018	0.015	0.141	0.100	0.057	0.037	0.111	0.101	0.023	0.025	0.032	0.233
14-Jul	0.100	0.021	0.512	0.021	0.085	0.073	0.048	0.039	0.017	0.185	0.162	0.060	0.038	0.175	0.210	0.025	0.032	0.065	0.292
15-Jul	0.126	0.027	0.549	0.026	0.174	0.076	0.066	0.051	0.033	0.222	0.211	0.064	0.041	0.202	0.301	0.032	0.062	0.213	0.309
16-Jul	0.170	0.057	0.559	0.047	0.242	0.112	0.104	0.061	0.043	0.274	0.242	0.068	0.046	0.218	0.400	0.062	0.073	0.347	0.346
17-Jul	0.238	0.310	0.572	0.067	0.297	0.173	0.111	0.073	0.052	0.303	0.290	0.138	0.058	0.229	0.485	0.073	0.122	0.402	0.416
18-Jul	0.342	0.489	0.605	0.182	0.437	0.307	0.114	0.086	0.058	0.340	0.347	0.279	0.086	0.246	0.517	0.122	0.164	0.435	0.495
19-Jul	0.504	0.607	0.667	0.322	0.566	0.363	0.115	0.102	0.069	0.375	0.367	0.344	0.136	0.255	0.533	0.164	0.190	0.468	0.501
20-Jul	0.670	0.777	0.747	0.474	0.695	0.406	0.116	0.113	0.141	0.409	0.421	0.400	0.194	0.284	0.557	0.190	0.232	0.498	0.522
21-Jul	0.795	0.899	0.803	0.563	0.766	0.464	0.120	0.174	0.235	0.464	0.500	0.457	0.225	0.334	0.582	0.232	0.269	0.531	0.542
22-Jul	0.840	0.920	0.835	0.598	0.796	0.555	0.178	0.269	0.319	0.569	0.566	0.473	0.261	0.370	0.599	0.269	0.298	0.555	0.552
23-Jul	0.872	0.926	0.848	0.642	0.813	0.652	0.291	0.322	0.406	0.679	0.639	0.518	0.308	0.402	0.612	0.298	0.343	0.592	0.583
24-Jul	0.888	0.932	0.864	0.681	0.833	0.720	0.463	0.382	0.488	0.744	0.679	0.576	0.376	0.451	0.624	0.343	0.399	0.640	0.648
25-Jul	0.913	0.935	0.876	0.722	0.844	0.781	0.574	0.471	0.570	0.785	0.698	0.675	0.424	0.535	0.635	0.399	0.420	0.713	0.659
26-Jul	0.925	0.938	0.894	0.752	0.861	0.833	0.693	0.618	0.640	0.812	0.729	0.719	0.477	0.612	0.670	0.420	0.428	0.755	0.666
27-Jul	0.931	0.944	0.911	0.842	0.865	0.867	0.753	0.730	0.694	0.827	0.774	0.729	0.546	0.678	0.720	0.428	0.432	0.774	0.670
28-Jul	0.934	0.947	0.921	0.883	0.872	0.897	0.822	0.783	0.740	0.836	0.806	0.744	0.637	0.740	0.748	0.432	0.440	0.786	0.674
29-Jul	0.939	0.952	0.932	0.903	0.878	0.913	0.864	0.816	0.766	0.844	0.831	0.796	0.711	0.798	0.773	0.440	0.450	0.794	0.681

- Continued -

Table 4. (p. 2 of 2)

	Cumulative Proportion[a]																		
Date	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
30-Jul	0.945	0.955	0.940	0.918	0.882	0.921	0.897	0.862	0.790	0.847	0.846	0.846	0.772	0.830	0.795	0.450	0.469	0.801	0.688
31-Jul	0.950	0.957	0.948	0.931	0.891	0.928	0.911	0.897	0.831	0.850	0.856	0.867	0.838	0.843	0.814	0.469	0.525	0.825	0.694
01-Aug	0.953	0.960	0.955	0.940	0.906	0.933	0.919	1.000	0.871	0.854	0.875	0.879	0.885	0.854	0.827	0.525	0.620	0.854	0.698
02-Aug	0.955	0.962	0.964	0.946	0.916	0.937	0.922		0.899	0.859	0.888	0.896	0.912	0.864	0.845	0.620	0.673	0.877	0.701
03-Aug	0.958	0.964	1.000	0.951	0.920	0.943	0.925		0.917	0.863	0.899	0.932	0.927	0.871	0.858	0.673	0.696	0.898	0.705
04-Aug	0.961	0.966		0.955	0.934	0.948	0.929		0.930	0.873	0.908	0.963	0.934	0.877	0.866	0.696	0.713	0.916	0.708
05-Aug	0.965	0.968		1.000	0.964	0.956	0.931		0.943	0.894	0.916	0.978	0.939	0.888	0.879	0.713	0.728	0.928	0.712
06-Aug	0.968	0.970			0.977	0.960	0.935		0.953	0.914	0.930	0.991	0.946	0.903	0.908	0.728	0.740	0.938	0.724
07-Aug	0.971	0.972			0.983	0.963	0.938		0.962	0.933	0.949	1.000	0.953	0.915	0.927	0.740	0.748	0.953	0.737
08-Aug	0.973	0.974			0.989	0.969	0.943		0.967	0.944	0.960		0.967	0.930	0.938	0.748	0.757	0.967	0.758
09-Aug	0.977	0.975			0.993	1.000	0.947		0.972	0.953	0.966		0.979	0.942	0.959	0.757	0.771	0.982	0.774
10-Aug	0.981	0.978			0.996		0.953		0.979	1.000	0.974		0.988	0.955	0.970	0.771	0.791	0.991	0.784
11-Aug	0.987	0.982			0.999		0.960		0.985		0.985		0.995	0.969	0.979	0.791	0.814	1.000	0.805
12-Aug	0.993	0.985			1.000		1.000		0.988		0.990		1.000	0.981	0.989	0.814	0.835		0.821
13-Aug	0.995	0.992							0.991		0.994			1.000	1.000	0.835	0.857		0.841
14-Aug	0.996	0.993							0.998		0.998					0.857	0.874		0.856
15-Aug	1.000	0.993							1.000		1.000					0.874	0.896		0.868
16-Aug		0.995														0.896	0.914		0.877
17-Aug		0.996														0.914	0.926		0.893
18-Aug		0.997														0.926	0.942		0.906
19-Aug		0.997														0.942	0.963		0.919
21-Aug		0.997														0.963	0.977		0.932
21-Aug		0.998														0.977	0.985		0.944
22-Aug		0.998														0.985	0.992		0.956
23-Aug		0.999														0.992	1.000		0.970
24-Aug		0.999														1.000			0.985
25-Aug		0.999																	1.000
26-Aug		0.999																	
27-Aug		0.999																	
28-Aug		1.000																	
Midpoint	19-Jul	19-Jul	14-Jul	21-Jul	19-Jul	10-Jul	25-Jul	26-Jul	25-Jul	22-Jul	21-Jul	23-Jul	27-Jul	25-Jul	18-Jul	01-Aug	31-Jul	21-Jul	19-Jul
No. days for 80%[b]	12	6	18	12	18	14	16	12	14	25	23	18	15	25	26	31	31	21	39

[a]Proportion accrued on last day (1981, 1982, 1984-1986, 1988) represents that portion of the escapement estimated to have entered the river after termination of counting operations.

[b]Inclusive dates: date proportion of escapement reached 10% through date proportion of escapement reached 90%.

FN: 97KECUM%.XLS

Table 5. Estimated sockeye salmon escapement into the Kenai River, 1 July through 25 August 1997. Species composition of daily sonar counts based on fish wheel catches.

	Sockeye		Pink		Coho		Chinook	
Date	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
1-Jul	3,451	3,451	0	0	0	0	0	0
2-Jul	5,063	8,514	0	0	0	0	0	0
3-Jul	6,051	14,565	0	0	0	0	0	0
4-Jul	7,543	22,108	0	0	0	0	0	0
5-Jul	9,162	31,270	0	0	0	0	0	0
6-Jul	4,764	36,034	0	0	0	0	0	0
7-Jul	3,850	39,884	0	0	0	0	0	0
8-Jul	6,680	46,564	0	0	0	0	0	0
9-Jul	3,768	50,332	0	0	0	0	0	0
10-Jul	21,821	72,153	0	0	0	0	0	0
11-Jul	52,344	124,497	0	0	0	0	0	0
12-Jul	57,930	182,427	0	0	0	0	0	0
13-Jul	66,019	248,446	0	0	0	0	0	0
14-Jul	62,582	311,028	0	0	0	0	0	0
15-Jul	18,509	329,537	0	0	0	0	0	0
16-Jul	39,114	368,651	0	0	0	0	0	0
17-Jul	73,994	442,645	0	0	0	0	0	0
18-Jul	84,110	526,755	0	0	0	0	0	0
19-Jul	7,202	533,957	0	0	0	0	0	0
20-Jul	22,065	556,022	0	0	0	0	0	0
21-Jul	21,260	577,282	0	0	0	0	0	0
22-Jul	10,504	587,786	0	0	0	0	0	0
23-Jul	33,190	620,976	0	0	0	0	0	0
24-Jul	69,554	690,530	0	0	0	0	0	0
25-Jul	11,293	701,823	0	0	0	0	0	0
26-Jul	6,998	708,821	0	0	0	0	0	0
27-Jul	4,145	712,966	0	0	0	0	0	0
28-Jul	5,003	717,969	0	0	0	0	0	0
29-Jul	7,335	725,304	0	0	0	0	0	0
30-Jul	6,935	732,239	0	0	0	0	0	0
31-Jul	6,842	739,081	0	0	0	0	0	0
1-Aug	4,077	743,158	0	0	0	0	0	0
2-Aug	2,834	745,992	0	0	0	0	0	0
3-Aug	4,239	750,231	0	0	0	0	0	0
4-Aug	3,859	754,090	0	0	0	0	0	0
5-Aug	3,633	757,723	0	0	0	0	0	0
6-Aug	12,835	770,558	0	0	0	0	0	0
7-Aug	13,970	784,528	0	0	0	0	0	0
8-Aug	22,172	806,700	0	0	0	0	0	0
9-Aug	17,484	824,184	0	0	0	0	0	0

FN 97KE.xls

Table 5 (p. 2 of 2)

	Sockeye		Pink		Coho		Chinook	
Date	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
10-Aug	10,859	835,043	0	0	0	0	0	0
11-Aug	21,728	856,771	0	0	0	0	0	0
12-Aug	17,954	874,725	0	0	0	0	0	0
13-Aug	20,760	895,485	61	61	1,736	1,736	0	0
14-Aug	15,882	911,367	0	61	1,205	2,941	0	0
15-Aug	12,993	924,360	0	61	1,838	4,779	121	121
16-Aug	9,454	933,814	0	61	1,546	6,325	0	121
17-Aug	17,265	951,079	0	61	1,919	8,244	0	121
18-Aug	13,949	965,028	67	128	1,171	9,415	67	188
19-Aug	14,022	979,050	0	128	1,418	10,833	0	188
20-Aug	13,079	992,129	0	128	976	11,809	0	188
21-Aug	12,912	1,005,041	0	128	370	12,179	29	217
22-Aug	13,077	1,018,118	0	128	411	12,590	0	217
23-Aug	14,297	1,032,415	41	169	389	12,979	0	217
24-Aug	16,872	1,049,287	86	255	467	13,446	85	302
25-Aug	15,531	1,064,818	0	255	335	13,781	11	313

FN:97KE.xls

Table 6. Distribution of sockeye salmon escapement by bank recorded by side-scanning sonar in the Kenai, Kasilof, Crescent, and Yentna Rivers 1979-1997.

	Kenai River		Kasilof River		Crescent River		Yentna River	
Year	North Bank	South Bank	North Bank	South Bank	North Bank	South Bank	North Bank	South Bank
1979	72	28	53	47				
1980	61	39	52	48	49	51		
1981	72	28	69	31	57	43		
1982	39	61	73	27	54	46		
1983	42	58	51	49	39	61		
1984	65	35	56	44	71	28		
1985	54	46	70	30	70	30	9	91
1986	62	38	57	43	84	16	32	68
1987	48	52	55	45	64	36	10	90
1988	47	53	32	68	53	47	8	92
1989	57	43	39	61	52	48	12	88
1990	62	38	29	71	44	56	2	98
1991	73	27	39	61	33	67	8	92
1992	60	40	45	55	56	44	5	95
1993	49	51	28	72	41	56	14	86
1994	52	48	47	53	65	35	8	92
1995	52	48	38	62	68	32	11	89
1996	54	46	61	39	68	32	21	79
1997	56	44	41	59	79	21	11	89

FN: 97BNK%.XLS

Table 7. Daily fish wheel catch by species for the north bank of the Kenai River, 2 July through 25 August 1997.[a]

Date	Hours open	Sockeye		Pink		Coho		Chinook	
		Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
2-Jul	15.00	0	0	0	0	0	0	1	0
3-Jul	18.00	0	0	0	0	0	0	0	0
4-Jul	14.00	7	7	0	0	0	0	0	0
5-Jul	12.00	5	12	0	0	0	0	0	0
6-Jul	17.00	5	17	0	0	0	0	0	0
7-Jul	17.00	12	29	0	0	0	0	1	1
8-Jul	25.00	17	46	0	0	0	0	2	3
9-Jul	23.25	12	58	0	0	0	0	1	4
10-Jul	21.50	17	75	0	0	0	0	0	4
11-Jul	6.00	283	358	5	5	0	0	1	5
12-Jul	1.50	132	490	0	5	0	0	0	5
13-Jul	2.25	157	647	1	6	0	0	1	6
14-Jul	3.25	159	806	1	7	0	0	0	6
15-Jul	5.75	222	1,028	0	7	0	0	0	6
16-Jul	42.00	0	1,028	0	7	0	0	0	6
17-Jul	0.00	212	1,240	0	7	0	0	0	6
18-Jul	0.75	150	1,390	0	7	0	0	0	6
19-Jul	15.25	129	1,519	0	7	0	0	0	6
20-Jul	10.00	152	1,671	0	7	0	0	0	6
21-Jul	13.50	197	1,868	0	7	0	0	1	7
22-Jul	9.75	78	1,946	2	9	0	0	1	8
23-Jul	5.25	219	2,165	0	9	0	0	0	8
24-Jul	0.50	170	2,335	0	9	0	0	1	9
25-Jul	4.00	169	2,504	0	9	0	0	1	10
26-Jul	9.75	96	2,600	1	10	0	0	1	11
27-Jul	22.50	50	2,650	2	12	0	0	2	13
28-Jul	52.00	2	2,652	2	14	0	0	3	16
29-Jul	23.50	114	2,766	0	14	0	0	1	17
30-Jul	9.25	47	2,813	0	14	0	0	0	17
31-Jul	24.00	59	2,872	1	15	0	0	0	17
1-Aug	26.75	45	2,917	0	15	0	0	0	17
2-Aug	11.00	36	2,953	0	15	0	0	0	17
3-Aug	27.00	117	3,070	0	15	0	0	2	19
4-Aug	19.50	33	3,103	0	15	0	0	1	20
5-Aug	22.00	78	3,181	1	16	0	0	2	22
6-Aug	8.75	266	3,447	0	16	2	2	1	23
7-Aug	7.25	224	3,671	0	16	4	6	1	24
8-Aug	5.00	150	3,821	0	16	0	6	0	24
9-Aug	3.00	68	3,889	0	16	0	6	0	24
10-Aug	9.00	67	3,956	0	16	8	14	0	24
11-Aug	4.50	81	4,037	0	16	3	17	0	24
12-Aug	5.25	102	4,139	0	16	8	25	0	24
13-Aug	10.75	300	4,439	1	17	25	50	0	24
14-Aug	6.25	302	4,741	0	17	23	73	0	24
15-Aug	9.83	220	4,961	0	17	31	104	2	26

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Table 7 (p. 2 of 2)

Date	Hours open	Sockeye		Pink		Coho		Chinook	
		Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
16-Aug	11.00	98	5,059	0	17	16	120	0	26
17-Aug	11.00	198	5,257	0	17	22	142	0	26
18-Aug	11.00	191	5,448	1	18	16	158	1	27
19-Aug	9.00	167	5,615	0	18	17	175	0	27
20-Aug	6.00	67	5,682	0	18	5	180	0	27
21-Aug	14.00	529	6,211	0	18	15	195	1	28
22-Aug	24.00	827	7,038	0	18	26	221	0	28
23-Aug	9.00	661	7,699	2	20	18	239	0	28
24-Aug	6.50	215	7,914	1	21	6	245	1	29
25-Aug	16.25	972	8,886	0	21	21	266	1	30

[a] Fish wheel catch adjusted for 24 h: (daily catch*24 h) / hours open. Adjusted catch by species: 37,815 sockeye salmon; 64 pink salmon; 648 coho salmon; 111 chinook salmon; 229 Dolly Varden char; 58 rainbow trout.

Table 8. Age composition of sockeye salmon collected in the Kenai River 1970-1997.

Year	Percentage Compostion by Age Class[a,b]								
	1.1	1.2	1.3	1.4	2.1	2.2	2.3	Other	Sample Size
1970	tr	10.0	17.0	tr	26.0	25.0	15.0	6.0	225
1971	0.0	8.0	39.0	1.0	3.0	38.0	11.0	0.0	168
1972	0.0	21.0	34.0	0.0	0.0	23.0	20.0	0.0	403
1973	0.0	5.0	68.0	1.0	1.0	8.0	16.0	0.0	632
1974	2.0	18.0	46.0	0.0	3.0	18.0	12.0	0.0	295
1975	2.0	10.0	36.0	2.0	4.0	31.0	14.0	1.0	162
1976	1.0	46.0	20.0	0.0	2.0	22.0	8.0	1.0	948
1977	0.0	6.0	76.0	1.0	tr	7.0	10.0	0.0	1,265
1978	0.0	2.5	86.7	0.0	0.0	4.9	5.4	tr	811
1979	tr	20.2	61.1	0.0	0.0	11.8	6.2	tr	601
1980	0.0	27.7	45.1	0.0	0.0	16.2	10.1	tr	715
1981	0.0	16.2	70.9	0.0	0.0	8.1	4.8	0.0	1,757
1982	0.1	5.8	87.5	tr	0.0	2.9	3.7	0.0	1,787
1983	0.4	8.2	79.1	0.2	0.5	2.2	8.9	0.4	1,765
1984	0.2	23.4	38.2	3.5	6.0	12.8	19.2	2.2	2,364
1985	0.1	15.9	56.4	0.3	0.1	14.7	11.4	1.1	2,201
1986	0.0	31.8	39.5	0.7	0.3	8.2	18.0	1.5	789
1987	0.0	12.8	78.4	0.1	0.0	3.2	5.2	0.3	745
1988	0.3	11.6	74.2	0.4	0.2	3.1	10.2	0.1	1,420
1989	0.1	9.1	75.3	1.0	0.5	4.1	9.7	0.2	2,275
1990	0.6	21.6	41.4	0.6	0.3	13.7	21.1	0.8	1,513
1991	0.2	48.2	31.6	0.1	0.5	5.7	11.4	2.7	2,504
1992	0.0	2.9	79.4	tr	tr	6.1	11.0	tr	1,338
1993	0.3	12.2	30.5	2.6	6.3	6.4	41.2	0.5	2,088
1994	0.3	6.6	61.1	0.8	0.8	17.8	12.1	0.5	1,341
1995	0.3	31.9	26.4	0.4	2.4	6.6	31.3	0.7	712
1996	0.0	10.8	75.4	0.3	0.7	6.1	5.4	1.1	684
1997	0.1	7.6	75.2	0.4	0.4	2.8	13.0	0.5	963

[a] Percentages weighted by total numbers in the escapement: 1978 (Bethe et al. 1980), 1979-1982, 1984-1997.

[b] 1978-1997 from Waltemyer, ADF&G, Soldotna.

FN: KEAGCOMP.XLS

Table 9. Length composition of the major age classes of sockeye salmon collected in the Kenai River 1980-1997. Length measured from mid-eye to fork-of-tail.[a]

		Male			Female			
Year	Age Class	Ave Length (mm)	Stndrd Error	Sample Size	Ave Length (mm)	Stndrd Error	Sample Size	Ratio Male-Female
1980	1.2	482	4	168	494	4	100	1.7:1
1981		493	6	85	513	6	73	1.2:1
1982		483	9	70	505	13	32	2.2:1
1983		524	9	25	520	6	30	0.8:1
1984		474	3	280	473	4	196	1.4:1
1985		492	3	184	490	3	186	1.0:1
1986		488	4	155	492	6	96	1.6:1
1987		514	8	39	503	5	56	0.7:1
1988		522	8	79	511	4	84	0.9:1
1989		493	6	114	494	4	92	1.2:1
1990		474	0	168	478	0	127	1.3:1
1991		488	2	613	497	13	577	1.1:1
1993		474	4	123	481	4	132	0.9:1
1994		452	5	46	462	6	42	1.1:1
1995		492	4	116	487	4	111	1.0:1
1996		507	8	47	519	5	27	1.7:1
1980	1.3	580	3	180	561	2	192	0.9:1
1981		590	2	290	569	1	430	0.7:1
1982		596	2	723	572	1	841	0.9:1
1983		598	2	215	577	1	269	0.8:1
1984		582	2	385	559	1	395	1.0:1
1985		575	2	496	552	1	824	0.6:1
1986		584	3	112	564	2	200	0.6:1
1987		605	2	183	586	1	401	0.5:1
1988		598	1	428	572	2	624	0.7:1
1989		600	1	831	575	1	881	0.9:1
1990		586	0	358	559	0	318	1.1:1
1991		561	2	357	539	1	441	0.8:1
1992		572	2	370	547	1	714	0.5:1
1993		583	2	247	556	2	390	0.6:1
1994		579	2	367	552	1	452	0.8:1
1995		584	3	81	564	2	107	0.8:1
1996		607	2	243	589	1	273	0.9:1
1997		593	2	327	582	1	352	0.9:1
1984	2.2	505	4	116	508	3	159	0.7:1
1985		513	4	132	513	3	196	0.7:1
1994		481	4	67	488	2	171	0.4:1
1980	2.3	589	3	67	579	3	80	0.8:1
1982		598	5	46	580	8	21	2.2:1
1983		595	4	25	582	4	36	0.7:1
1984		570	2	210	557	2	192	1.1:1
1985		570	3	106	555	2	129	0.8:1
1986		585	5	52	568	3	89	0.6:1
1988		596	3	53	577	3	92	0.6:1
1989		600	3	112	579	2	108	1.0:1
1990		589	0	177	568	0	132	1.3:1
1991		572	2	153	543	3	139	1.1:1
1992		569	4	46	546	2	88	0.5:1
1993		583	2	357	560	1	503	0.7:1
1994		578	4	73	551	3	89	0.8:1
1995		588	3	114	569	3	109	1.1:1
1997		600	4	52	576	4	73	0.7:1

[a] 1980-1997 from Waltemyer, ADF&G, Soldotna.

FN: KELECOMP.XLS

Table 10. Estimated sockeye salmon escapement into the Kasilof River, 14 June through 12 August 1997.

Date	Daily	Cum	Date	Daily	Cum
14-Jun	685	685	14-Jul	1,799	165,930
15-Jun	1,164	1,849	15-Jul	1,749	167,679
16-Jun	1,546	3,395	16-Jul	3,458	171,137
17-Jun	3,614	7,009	17-Jul	7,786	178,923
18-Jun	3,428	10,437	18-Jul	2,487	181,410
19-Jun	5,659	16,096	19-Jul	1,987	183,397
20-Jun	9,964	26,060	20-Jul	1,830	185,227
21-Jun	7,083	33,143	21-Jul	1,083	186,310
22-Jun	4,389	37,532	22-Jul	1,892	188,202
23-Jun	4,258	41,790	23-Jul	5,317	193,519
24-Jun	7,132	48,922	24-Jul	3,607	197,126
25-Jun	11,342	60,264	25-Jul	2,273	199,399
26-Jun	13,026	73,290	26-Jul	1,808	201,207
27-Jun	12,107	85,397	27-Jul	1,816	203,023
28-Jun	4,359	89,756	28-Jul	2,550	205,573
29-Jun	6,099	95,855	29-Jul	2,098	207,671
30-Jun	8,430	104,285	30-Jul	3,236	210,907
1-Jul	5,337	109,622	31-Jul	2,553	213,460
2-Jul	11,086	120,708	1-Aug	2,132	215,592
3-Jul	3,849	124,557	2-Aug	2,624	218,216
4-Jul	12,003	136,560	3-Aug	2,187	220,403
5-Jul	2,159	138,719	4-Aug	1,912	222,315
6-Jul	1,317	140,036	5-Aug	3,877	226,192
7-Jul	4,724	144,760	6-Aug	5,770	231,962
8-Jul	1,122	145,882	7-Aug	6,490	238,452
9-Jul	2,073	147,955	8-Aug	7,498	245,950
10-Jul	2,707	150,662	9-Aug	5,397	251,347
11-Jul	4,194	154,856	10-Aug	4,518	255,865
12-Jul	4,139	158,995	11-Aug	5,926	261,791
13-Jul	5,136	164,131	12-Aug	4,234	266,025

FN: 97KA.XLS

Table 11. Kasilof River sockeye salmon escapement estimates 1968-1997.

Year	Escapement Estimated by Sonar Count[a]	Fish used for Artificial Propogation of Tustumena Lake[b]	Sonar Count Less Egg Take[c]
1968	89,000		
1969	46,000		
1970	38,000		
1971			
1972	113,000		
1973	40,000		
1974	70,000	205	69,795
1975	48,000	3,365	44,635
1976	139,000	5,463	133,537
1977	155,300	1,794	153,506
1978	116,600	6,681	109,919
1979	152,179	3,024	149,155
1980	187,154	6,030	181,124
1980	256,625	9,700	246,925
1982	180,239	11,571	168,668
1983	210,271	9,903	200,368
1984	231,685	11,141	220,544
1985	505,049	11,280	493,769
1986	275,963	11,952	264,011
1987	249,246	9,865	239,381
1988	204,000 [d]	9,387	195,000
1989	158,206	7,367	150,839
1990	144,136	6,831	137,305
1991	238,269	8,850	229,419
1992	184,178	6,550	177,628
1993	149,939	9,098	140,841
1994	205,117	13,596 [e]	191,521
1995	204,935	12,416	192,519
1996	249,944	11,724 [f]	238,220
1997	266,025	8,289	257,736

[a] Multiple transducer sonar counts rounded to the nearest thousand (1968-1978) from Namtvedt et al. (1979).
[b] From Cross et al. (1983): 1974-1980; FRED Div., Soldotna, Ak. files: 1981-1992; Fandrei, Cook Inlet Aquaculture Association: 1993-1995.
[c] Considered estimate of natural spawners above sonar site.
[d] Combined counts from weirs on Bear and Glacier Flat Creeks and surveys of spawning streams.
[e] Includes 290 fish not used for artificial propogation of Tustumena Lake, Fandrei (1995).
[f] Includes 550 fish not used for artificial propogation of Tustumena Lake, Fandrei (1996).

FN: KAHIST.XLS

Table 12. Peak sockeye salmon escapement counts in seven index areas, Kasilof River drainage 1975-1997.

Year	Nikolai Creek[a]	Crystal Creek[a]	Clear Creek[a]	Glacier Flat Creek[b]	Seepage Creek[a]	Moose Creek[a]	Bear Creek[b]	Total Index Count[c]
1975	5,700	400	300	14,400	3,700	3,300	27,700	55,500
1976	12,000	800	300	7,100	800	14,000	51,800	86,800
1977	29,100	600	1,800	5,800	800	16,600	58,000	112,700
1978	34,200	200	200	4,700	1,100	15,900	43,400	99,700
1979	19,100	500	400	5,600	800	8,100	35,900	70,400
1980	10,000	1,000	2,100	15,500	1,800	15,600	125,000	171,000
1981	36,000	860	2,978	40,071	3,376	12,968	75,117	171,370
1982	16,800	1,785	4,183	17,348	1,638	13,400	51,350	106,504
1983	17,100	1,657	860	38,776	3,305	19,245	61,957	142,900
1984	8,270	141	2,619	76,217	6,250	13,999	54,328	161,824
1985[d]	17,500	800	3,500	121,400	5,700	9,200	120,400	278,500
1986[d]	11,900	1,400	2,700	60,600	2,000	21,200	102,900	202,700
1987	9,002	1,385	7,704	61,000	791	17,601	71,250	168,733
1988	10,841	593	5,809	40,015	1,387	17,727	127,532	203,904
1989	4,818	1,033	559	20,156	940	17,058	62,941	107,505
1990	7,474	879	220	14,355	1,217	18,800	46,300	89,245
1991	21,582	391	1,223	12,068	1,661	18,105	68,880	123,910
1992	10,145	1,105	1,979	9,144	349	15,235	44,100	82,057
1993							36,002	36,002
1994	63,723			13,347[e]			39,100	116,170
1995								
1996							29,017	29,017
1997							58,692	58,692
							81,989	81,989

[a] Commercial Fisheries Division stream survey counts (1975-85); FRED Division stream survey counts (1982-92); U.S. Biological Service weir count (Nikolai Creek 1994).

[b] FRED Division weir count, 1980-90, 1992. 1991 count is result of foot survey. 1993-97 counts are results of foot and aerial surveys and weir count, Cook Inlet Aquaculture Association, Gary Fandrei (personal communication).

[c] Counts standardized to common unit for years when entire stream not surveyed.

[d] Flagg (1986). Numbers rounded to nearest 100 fish.

[e] U.S. Biological Service weir count (Glacier Flat Creek 1994). 1994 Glacier Flat Creek count includes 10,347 sockeye salmon passed through the weir and an estimated 3,000 sockeye salmon spawning downstream of the weir.

FN: KAESCIDX.XLS

Table 13. Cumulative proportion by date of salmon counts recorded in the Kasilof River 1979-1997.

	Cumulative Proportion[a,b]																		
Date	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
14-May			0.000																
15-May			0.001																
16-May			0.003																
17-May			0.003																
18-May			0.005																
19-May			0.006																
20-May			0.006																
21-May			0.007																
22-May			0.008																
23-May	0.000		0.008																
24-May	0.003		0.010																
25-May	0.004		0.011																
26-May	0.006		0.012																
27-May	0.008		0.013																
28-May	0.009		0.014																
29-May	0.011		0.015																
30-May	0.014		0.016																
31-May	0.017		0.018																
01-Jun	0.020		0.020																
02-Jun	0.023		0.022																
03-Jun	0.026		0.025																
04-Jun	0.030		0.027																
05-Jun	0.034		0.030																
06-Jun	0.036		0.032																
07-Jun	0.037		0.035																
08-Jun	0.039		0.038																
09-Jun	0.040		0.040			0.007													
10-Jun	0.041		0.043	0.001	0.045	0.008													
11-Jun	0.041		0.045	0.003	0.046	0.009									0.011	0.000			
12-Jun	0.042		0.047	0.005	0.048	0.011	0.002	0.037	0.044						0.026	0.002			
13-Jun	0.043		0.049	0.007	0.050	0.012	0.003	0.041	0.051						0.043	0.004			0.003
14-Jun	0.044		0.051	0.008	0.051	0.013	0.003	0.045	0.062	0.009					0.052	0.007	0.001	0.003	0.007
15-Jun	0.044		0.055	0.010	0.053	0.015	0.004	0.048	0.073	0.014	0.001	0.002	0.002	0.004	0.064	0.010	0.002	0.007	0.013
16-Jun	0.045		0.059	0.011	0.056	0.018	0.004	0.053	0.091	0.018	0.002	0.004	0.009	0.014	0.074	0.014	0.004	0.016	0.026
17-Jun	0.046		0.064	0.013	0.058	0.020	0.005	0.059	0.106	0.021	0.004	0.006	0.015	0.020	0.090	0.017	0.006	0.023	0.039
18-Jun	0.048		0.075	0.015	0.060	0.022	0.005	0.062	0.120	0.025	0.006	0.008	0.019	0.031	0.103	0.020	0.010	0.033	0.061
19-Jun	0.049		0.082	0.027	0.063	0.025	0.006	0.066	0.146	0.028	0.007	0.009	0.026	0.038	0.118	0.025	0.016	0.047	0.098
20-Jun	0.051		0.099	0.035	0.065	0.031	0.007	0.068	0.171	0.032	0.011	0.010	0.033	0.050	0.132	0.029	0.024	0.055	0.125
21-Jun	0.054		0.114	0.040	0.068	0.039	0.007	0.071	0.190	0.038	0.014	0.012	0.044	0.064	0.143	0.034	0.032	0.079	0.141
22-Jun	0.060	0.003	0.133	0.043	0.070	0.048	0.008	0.073	0.198	0.046	0.016	0.014	0.056	0.082					

- Continued -

Table 13. (p. 2 of 3)

Date	Cumulative Proportion[a,b]																		
	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
23-Jun	0.066	0.007	0.162	0.045	0.074	0.058	0.009	0.074	0.201	0.053	0.019	0.015	0.070	0.101	0.154	0.039	0.040	0.111	0.157
24-Jun	0.077	0.009	0.195	0.049	0.076	0.069	0.012	0.075	0.206	0.065	0.021	0.017	0.085	0.125	0.179	0.047	0.047	0.145	0.184
25-Jun	0.093	0.022	0.223	0.053	0.078	0.075	0.015	0.077	0.212	0.077	0.024	0.019	0.096	0.146	0.217	0.058	0.059	0.162	0.227
26-Jun	0.108	0.035	0.261	0.055	0.080	0.080	0.017	0.079	0.218	0.089	0.031	0.022	0.110	0.174	0.257	0.071	0.071	0.181	0.276
27-Jun	0.125	0.051	0.288	0.058	0.082	0.089	0.019	0.082	0.222	0.105	0.037	0.025	0.135	0.215	0.293	0.094	0.088	0.227	0.321
28-Jun	0.153	0.075	0.342	0.061	0.085	0.099	0.022	0.085	0.227	0.133	0.046	0.030	0.171	0.250	0.317	0.129	0.120	0.295	0.337
29-Jun	0.169	0.094	0.389	0.064	0.090	0.111	0.025	0.095	0.238	0.157	0.057	0.037	0.204	0.290	0.330	0.172	0.166	0.318	0.360
30-Jun	0.196	0.136	0.438	0.069	0.110	0.123	0.029	0.121	0.249	0.173	0.074	0.051	0.238	0.323	0.357	0.220	0.196	0.346	0.392
01-Jul	0.229	0.166	0.500	0.078	0.153	0.136	0.035	0.153	0.267	0.184	0.098	0.065	0.259	0.338	0.386	0.250	0.216	0.381	0.412
02-Jul	0.248	0.217	0.512	0.091	0.165	0.150	0.039	0.180	0.297	0.189	0.153	0.076	0.275	0.349	0.419	0.256	0.229	0.386	0.454
03-Jul	0.281	0.250	0.522	0.104	0.188	0.157	0.044	0.198	0.317	0.196	0.178	0.091	0.293	0.372	0.429	0.282	0.241	0.389	0.468
04-Jul	0.325	0.280	0.529	0.115	0.212	0.178	0.056	0.215	0.334	0.224	0.183	0.120	0.338	0.377	0.441	0.322	0.248	0.399	0.513
05-Jul	0.374	0.314	0.534	0.122	0.221	0.217	0.066	0.228	0.357	0.235	0.225	0.158	0.385	0.394	0.459	0.333	0.265	0.438	0.521
06-Jul	0.404	0.338	0.543	0.129	0.231	0.243	0.071	0.245	0.385	0.255	0.277	0.193	0.400	0.414	0.467	0.375	0.293	0.452	0.526
07-Jul	0.458	0.353	0.551	0.136	0.240	0.263	0.078	0.257	0.403	0.306	0.321	0.209	0.406	0.419	0.496	0.437	0.315	0.475	0.544
08-Jul	0.473	0.366	0.562	0.145	0.247	0.304	0.095	0.261	0.422	0.329	0.346	0.235	0.417	0.428	0.537	0.483	0.322	0.496	0.548
09-Jul	0.496	0.379	0.604	0.156	0.263	0.358	0.103	0.269	0.438	0.382	0.378	0.254	0.431	0.439	0.548	0.501	0.335	0.499	0.556
10-Jul	0.509	0.393	0.649	0.164	0.294	0.391	0.114	0.289	0.450	0.457	0.404	0.258	0.450	0.453	0.558	0.535	0.355	0.507	0.566
11-Jul	0.519	0.413	0.677	0.177	0.315	0.411	0.119	0.323	0.456	0.507	0.431	0.267	0.477	0.462	0.571	0.545	0.359	0.524	0.582
12-Jul	0.532	0.421	0.712	0.197	0.344	0.416	0.126	0.337	0.481	0.567	0.488	0.281	0.488	0.522	0.590	0.552	0.365	0.528	0.598
13-Jul	0.550	0.426	0.746	0.217	0.395	0.427	0.148	0.430	0.508	0.600	0.500	0.294	0.490	0.586	0.680	0.565	0.373	0.538	0.617
14-Jul	0.579	0.436	0.797	0.247	0.465	0.445	0.208	0.501	0.520	0.614	0.514	0.303	0.492	0.598	0.707	0.584	0.387	0.650	0.624
15-Jul	0.629	0.464	0.838	0.293	0.514	0.484	0.267	0.513	0.587	0.659	0.532	0.317	0.508	0.608	0.748	0.623	0.395	0.710	0.630
16-Jul	0.643	0.528	0.863	0.358	0.547	0.543	0.382	0.528	0.600	0.676	0.566	0.350	0.523	0.616	0.792	0.636	0.487	0.721	0.643
17-Jul	0.674	0.570	0.877	0.404	0.663	0.590	0.418	0.544	0.608	0.691	0.615	0.498	0.546	0.629	0.804	0.679	0.618	0.728	0.673
18-Jul	0.703	0.609	0.891	0.491	0.759	0.636	0.432	0.562	0.619	0.703	0.629	0.602	0.615	0.645	0.816	0.711	0.641	0.737	0.682
19-Jul	0.730	0.649	0.904	0.577	0.775	0.693	0.436	0.575	0.699	0.723	0.648	0.623	0.649	0.665	0.828	0.732	0.667	0.758	0.689
20-Jul	0.755	0.693	0.922	0.642	0.785	0.739	0.439	0.586	0.731	0.770	0.711	0.664	0.661	0.705	0.839	0.750	0.688	0.777	0.696
21-Jul	0.767	0.715	0.936	0.702	0.804	0.778	0.464	0.601	0.765	0.857	0.747	0.676	0.679	0.725	0.849	0.763	0.704	0.790	0.700
22-Jul	0.781	0.738	0.942	0.744	0.822	0.810	0.551	0.611	0.809	0.921	0.768	0.687	0.710	0.740	0.857	0.771	0.753	0.806	0.707
23-Jul	0.848	0.775	0.947	0.759	0.833	0.832	0.609	0.618	0.851	0.929	0.806	0.706	0.751	0.770	0.877	0.778	0.807	0.823	0.727
24-Jul	0.860	0.788	0.952	0.769	0.842	0.864	0.649	0.627	0.873	0.935	0.816	0.723	0.781	0.844	0.892	0.789	0.868	0.850	0.741
25-Jul	0.875	0.803	0.954	0.784	0.849	0.888	0.683	0.717	0.888	0.939	0.824	0.754	0.813	0.890	0.909	0.799	0.883	0.875	0.750
26-Jul	0.896	0.818	0.957	0.800	0.854	0.910	0.733	0.795	0.897	0.943	0.840	0.776	0.849	0.933	0.921	0.806	0.898	0.883	0.756
27-Jul	0.910	0.830	0.959	0.818	0.858	0.918	0.791	0.806	0.906	0.948	0.850	0.790	0.881	0.962	0.930	0.813	0.919	0.890	0.763
28-Jul	0.930	0.840	0.962	0.836	0.862	0.926	0.826	0.812	0.916	0.953	0.860	0.808	0.914	0.971	0.946	0.826	0.927	0.896	0.773
29-Jul	0.941	0.853	0.963	0.847	0.867	0.933	0.842	0.829	0.925	0.958	0.869	0.836	0.935	0.977	0.958	0.846	0.934	0.900	0.781
30-Jul	0.947	0.864	0.964	0.857	0.874	0.939	0.853	0.888	0.939	0.961	0.877	0.856	0.947	0.983	0.969	0.868	0.939	0.904	0.793
31-Jul	0.954	0.878	0.966	0.866	0.889	0.943	0.865	0.917	0.962	0.965	0.885	0.872	0.956	0.989	0.974	0.892	0.945	0.907	0.802
01-Aug	0.957	0.889	1.000	0.876	1.000	1.000	0.875	1.000	0.975	0.969	0.892	0.885	0.960	0.994	0.979	0.928	0.950	0.923	0.810

- Continued -

Table 13. (p. 3 of 3)

	Cumulative Proportion[a,b]																		
Date	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
02-Aug	0.963	0.900		0.886			0.881		0.982	0.973	0.898	0.901	0.966	1.000	0.987	0.943	0.956	0.938	0.820
03-Aug	0.966	0.906		0.895			0.890		0.986	0.977	0.905	0.916	0.973		0.992	0.952	0.969	0.952	0.829
04-Aug	0.969	0.915		1.000			0.898		0.990	0.983	0.916	0.924	0.978		0.996	0.959	0.984	0.969	0.836
05-Aug	0.980	0.925					0.904		0.994	0.990	0.927	0.933	0.981		1.000	0.966	0.988	0.979	0.850
06-Aug	0.983	0.932					0.909		0.997	0.993	0.943	0.941	0.987			0.972	0.993	0.984	0.872
07-Aug	0.986	0.939					0.917		1.000	0.997	0.958	0.946	0.994			0.977	1.000	0.992	0.896
08-Aug	0.989	0.946					0.927			1.000	0.963	0.953	1.000			0.981		1.000	0.925
09-Aug	0.991	0.961					0.938				0.969	0.963				0.987			0.945
10-Aug	0.994	0.968					0.945				0.976	0.972				0.994			0.962
11-Aug	0.998	0.979					0.949				0.982	0.977				1.000			0.984
12-Aug	1.000	0.988					1.000				0.986	0.984							1.000
13-Aug		1.000									0.990	0.989							
14-Aug											0.996	0.995							
15-Aug											1.000	1.000							
Midpoint	10-Jul	16-Jul	01-Jul	19-Jul	15-Jul	16-Jul	22-Jul	14-Jul	13-Jul	11-Jul	13-Jul	18-Jul	15-Jul	12-Jul	08-Jul	09-Jul	14-Jul	10-Jul	4-Jul
No. days for 80%[c]	32	34	29	32	33	28	28	32	41	26	33	29	33	34	37	35	30	30	49

[a] Proportion for first day (1983-1988) represents that portion of the escapement estimated to have passed the counting site prior to start of counting operations.
[b] Proportion for last date (1981-1986) represents that portion of the escapement estimated to have entered the river after termination of counting operations.
[c] Inclusive dates: date proportion of escapement reached 10% through date proportion of escapement reached 90%.

Table 14. Daily fish wheel catch by species for the north bank of the Kasilof River, 17 June through 8 August 1997.

		Sockeye		Pink		Coho		Chinook[a]	
Date	Hours open	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
17-Jun	14.7	75	75	0	0	0	0	0	0
18-Jun	0.0	0	75	0	0	0	0	0	0
19-Jun	3.8	30	105	0	0	0	0	0	0
20-Jun	7.6	100	205	0	0	0	0	0	0
21-Jun	3.0	28	233	0	0	0	0	0	0
22-Jun	12.0	56	289	0	0	0	0	0	0
23-Jun	10.7	33	322	2	2	0	0	0	0
24-Jun	10.0	53	375	0	2	0	0	0	0
25-Jun	8.5	59	434	0	2	0	0	0	0
26-Jun	10.8	117	551	0	2	0	0	1	1
27-Jun	7.8	101	652	0	2	0	0	0	1
28-Jun	10.2	62	714	0	2	0	0	0	1
29-Jun	8.3	55	769	0	2	0	0	0	1
30-Jun	8.3	208	977	0	2	0	0	0	1
01-Jul	10.7	31	1,008	0	2	0	0	1	2
02-Jul	9.2	39	1,047	0	2	0	0	2	4
03-Jul	8.7	29	1,076	0	2	0	0	1	5
04-Jul	7.5	86	1,162	0	2	0	0	0	5
05-Jul	4.3	6	1,168	0	2	0	0	0	5
06-Jul	11.3	12	1,180	0	2	0	0	3	8
07-Jul	14.1	35	1,215	0	2	0	0	2	10
08-Jul	5.8	17	1,232	0	2	0	0	1	11
09-Jul	24.2	15	1,247	1	3	1	1	2	13
10-Jul	8.4	54	1,301	3	6	0	1	0	13
11-Jul	9.2	29	1,330	0	6	0	1	1	14
12-Jul	5.3	45	1,375	0	6	0	1	0	14
13-Jul	5.0	78	1,453	0	6	0	1	0	14
14-Jul	14.0	61	1,514	0	6	0	1	0	14
15-Jul	12.3	19	1,533	0	6	0	1	2	16
16-Jul	12.4	41	1,574	0	6	0	1	1	17
17-Jul	7.3	60	1,634	0	6	0	1	0	17
18-Jul	18.3	34	1,668	1	7	0	1	2	19
19-Jul	14.3	21	1,689	1	8	0	1	3	22
20-Jul	7.5	28	1,717	2	10	0	1	1	23
21-Jul	6.7	9	1,726	0	10	0	1	0	23
22-Jul	4.6	7	1,733	0	10	0	1	0	23
23-Jul	5.6	16	1,749	0	10	0	1	3	26
24-Jul	5.3	69	1,818	1	11	0	1	3	29
25-Jul	5.2	13	1,831	0	11	0	1	1	30
26-Jul	5.3	20	1,851	0	11	0	1	2	32
27-Jul	5.2	15	1,866	0	11	0	1	2	34
28-Jul	16.3	19	1,885	1	12	0	1	4	38
29-Jul	11.2	22	1,907	1	13	0	1	0	38
30-Jul	15.0	6	1,913	2	15	0	1	0	38
31-Jul	0.0	0	1,913	0	15	0	1	0	38
01-Aug	21.3	17	1,930	0	15	0	1	3	41
02-Aug	0.0	0	1,930	0	15	0	1	0	41
03-Aug	19.4	34	1,964	1	16	0	1	1	42
04-Aug	0.0	0	1,964	0	16	0	1	0	42
05-Aug	17.7	20	1,984	0	16	0	1	2	44
06-Aug	20.5	43	2,027	0	16	2	3	2	46
07-Aug	13.0	33	2,060	0	16	0	3	0	46
08-Aug	7.8	16	2,076	0	16	0	3	0	46

[a] Other species captured included: 4 Dolly Varden char; 1 Rainbow trout.

FN: 97KAIFWR.XLS

Table 15. Age composition of sockeye salmon collected in the Kasilof River 1969-1997.

	Percentage Compostion by Age Class [a, b]								
Year	1.1	1.2	1.3	1.4	2.1	2.2	2.3	Other	Sample Size
1969	0.0	14.0	39.0	1.0	0.0	30.0	16.0	0.0	399
1970	tr	2.0	37.0	2.0	0.0	16.0	11.0	2.0	297
1971	0.0	6.0	69.0	0.0	0.0	8.0	16.0	1.0	153
1972	tr	42.0	36.0	1.0	tr	3.0	18.0	0.0	668
1973	0.0	20.0	57.0	0.0	0.0	19.0	4.0	0.0	374
1974	0.0	35.0	59.0	0.0	tr	4.0	2.0	0.0	254
1975	1.0	29.0	7.0	0.0	0.0	58.0	4.0	1.0	931
1976	tr	32.0	20.0	0.0	tr	35.0	12.0	1.0	755
1977	tr	30.0	30.0	0.0	1.0	28.0	11.0	0.0	1,209
1978	0.0	42.0	35.0	0.0	0.0	14.0	9.0	0.0	967
1979	0.0	52.2	37.2	0.0	tr	8.4	1.7	0.5	590
1980	0.0	58.7	27.8	0.0	0.0	8.0	4.5	1.0	988
1981	0.0	30.2	62.2	0.0	0.0	6.0	1.6	0.0	1,479
1982	1.0	34.0	49.5	0.0	0.1	10.7	4.7	0.0	1,518
1983	0.0	48.4	34.3	0.0	0.0	12.8	4.5	0.0	1,997
1984	0.0	50.5	24.8	tr	0.2	17.9	6.6	0.0	2,269
1985	0.2	57.3	21.8	0.1	0.1	17.8	2.6	0.1	3,063
1986	0.0	40.9	42.0	0.3	0.1	11.9	4.6	0.2	1,660
1987		43.4	27.4	0.0	0.1	22.4	6.4	0.3	1,248
1988	0.9	37.5	32.9	0.1	0.1	18.6	10.6	0.2	2,282
1989	0.2	44.0	46.3	0.2	0.0	5.2	4.2	0.0	1,216
1990	0.4	32.9	20.7	0.3	0.0	33.2	12.4	0.3	762
1991	0.0	31.5	33.4	0.1	0.1	29.0	5.8	0.1	2,106
1992	0.0	21.2	27.6	0.0	0.2	35.0	15.9	0.0	1,717
1993	0.4	16.3	29.8	0.0	0.4	28.0	25.2	0.0	571
1994	0.0	26.0	28.3	0.0	0.0	28.6	17.2	0.0	697
1995	0.2	44.0	15.5	0.0	0.0	25.0	15.3	0.0	587
1996	0.0	24.8	48.3	0.0	0.0	21.4	5.6	0.0	721
1997	0.0	21.1	54.8	0.0	0.0	13.5	10.7	0.0	758

[a] Percentages weighted by total numbers in the escapement: 1979-1996.

[b] 1978-1997 from Waltemyer, ADF&G, Soldotna.

FN: KAAGCOMP.XLS

Table 16. Length composition of the major age classes of sockeye salmon collected in the Kasilof River 1980-1997. Length measured from mid-eye to fork-of-tail.

		Male			Female			
Year	Age Class	Ave Length* (mm)	Stndrd Error	Sample Size	Ave Length* (mm)	Stndrd Error	Sample Size	Ratio Male:Female
1980	1.2	474	2	189	464	1	376	0.5:1
1981		503	2	241	492	3	146	1.7:1
1982		481	2	285	466	2	235	1.2:1
1983		493	2	113	491	3	78	1.4:1
1984		480	1	544	478	1	428	1.3:1
1985		474	1	723	472	1	897	0.8:1
1986		482	2	266	482	1	368	0.7:1
1987		472	2	282	470	2	257	1.1:1
1988		480	1	353	477	1	480	0.7:1
1989		481	2	245	480	2	290	0.8:1
1990		462	0	139	458	0	91	1.5:1
1991		467	2	326	461	2	305	1.1:1
1992		467	2	184	466	2	212	0.9:1
1993		479	4	40	479	3	53	0.8:1
1994		465	2	90	465	2	91	1.0:1
1995		491	2	117	483	2	141	0.8:1
1996		476	3	94	475	3	85	1.1:1
1997		456	4	80	452	3	80	1.0:1
1980	1.3	531	7	35	516	2	115	0.3:1
1981		566	1	422	558	1	369	1.1:1
1982		549	1	377	542	1	428	0.9:1
1983		558	2	170	547	2	187	0.9:1
1984		539	1	304	533	1	383	0.8:1
1985		531	2	341	527	1	433	0.8:1
1986		550	2	342	543	1	405	0.8:1
1987		553	2	191	552	2	154	1.2:1
1988		550	1	311	543	1	382	0.8:1
1989		550	2	266	542	2	296	0.9:1
1990		518	0	81	523	0	106	0.8:1
1991		531	1	418	518	1	335	1.3:1
1992		536	2	195	527	2	197	1.0:1
1993		550	3	101	542	3	69	1.5:1
1994		538	3	98	530	3	99	1.1:1
1995		542	5	42	534	3	49	0.9:1
1996		566	2	213	556	2	135	1.6:1
1997		555	2	223	541	2	192	1.2:1
1982	2.2	479	3	65	472	3	81	0.8:1
1984		484	2	202	482	1	223	0.9:1
1985		482	2	248	476	1	319	0.8:1
1986		492	4	78	489	2	115	0.7:1
1987		478	2	137	475	2	141	1.0:1
1988		486	2	173	479	1	220	0.8:1
1990		453	0	104	457	0	111	0.9:1
1991		471	2	289	480	11	301	1.0:1
1992		464	2	264	464	1	427	0.6:1
1993		486	3	58	480	2	102	0.7:1
1994		469	2	97	468	2	102	1.0:1
1995		492	3	61	485	2	86	0.7:1
1996		482	3	69	472	2	85	0.8:1
1997		459	4	47	450	3	55	0.9:1
1982	2.3	548	4	41	543	4	40	1.0:1
1984		533	3	102	526	3	80	1.3:1
1988		544	2	104	543	2	115	0.9:1
1990		514	0	63	529	0	61	1.0:1
1991		516	4	61	514	3	64	1.0:1
1992		534	3	112	532	2	122	0.9:1
1993		542	3	66	533	3	78	0.8:1
1994		545	4	49	529	3	71	0.7:1
1995		546	4	42	536	3	48	0.9:1
1997		546	6	39	526	5	42	0.9:1

*1980-1997 from Waltemyer, ADF&G, Soldotna.

FN: KALECOMP.XLS

Table 17. Estimated salmon escapement into the Crescent River 1979-1997.

Date	Sockeye	Pink	Chum	Coho	Other [a]	Total
1979	86,654	3,685	95		122	90,556
1980	90,863					90,863
1981	41,213	376			199	41,788
1982	58,957	111				59,068
1983	92,122	221				92,343
1984	118,345		4,880	538		123,763
1985	128,628	984	505	850		130,967
1986	20,385					20,385
1987	120,219	2,044	7,258	552	552	130,625
1988	57,716	85	3,362	245	549	61,957
1989	71,064	354	4,392		151	75,961
1990	52,238	219	7,677	73	21	60,228
1991	44,578	322	6,080	83		51,063
1992	58,241	738	6,892	303	171	66,345
1993	37,556	1,976	1,872		1,619	43,023
1994	30,355	657	2,939	73	7,771	41,795
1995	52,311	1,938	4,583	554	4,691	64,077
1996	28,729	250	2,821	52	3,487	35,339
1997	70,768	12,428	1,559		3,092	87,847

[a] 1993-97 counts represent combined chinook salmon and Dolly Varden char.

FN: CRHIST.XLS

Table 18. Estimated salmon escapment into the Crescent River, 24 June through 5 August 1997. Species composition of daily sonar counts based on fish wheel catches.

	Sockeye		Pink		Chum		Coho		Other	
Date	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
24-Jun	259	259	6	6	0	0	0	0	3	3
25-Jun	732	991	18	24	0	0	0	0	9	12
26-Jun	458	1,449	10	34	0	0	0	0	6	18
27-Jun	598	2,047	15	49	0	0	0	0	7	25
28-Jun	568	2,615	13	62	0	0	0	0	7	32
29-Jun	881	3,496	22	84	0	0	0	0	10	42
30-Jun	600	4,096	14	98	0	0	0	0	7	49
1-Jul	643	4,739	26	124	0	0	0	0	15	64
2-Jul	1,667	6,406	68	192	0	0	0	0	39	103
3-Jul	4,429	10,835	180	372	0	0	0	0	103	206
4-Jul	2,463	13,298	101	473	0	0	0	0	57	263
5-Jul	1,812	15,110	238	711	0	0	0	0	32	295
6-Jul	1,813	16,923	237	948	0	0	0	0	33	328
7-Jul	1,940	18,863	254	1,202	0	0	0	0	35	363
8-Jul	2,375	21,238	311	1,513	0	0	0	0	42	405
9-Jul	3,382	24,620	443	1,956	0	0	0	0	60	465
10-Jul	5,768	30,388	571	2,527	0	0	0	0	90	555
11-Jul	4,977	35,365	492	3,019	0	0	0	0	78	633
12-Jul	3,592	38,957	355	3,374	0	0	0	0	56	689
13-Jul	2,130	41,087	520	3,894	17	17	0	0	173	862
14-Jul	1,785	42,872	436	4,330	15	32	0	0	145	1,007
15-Jul	1,331	44,203	325	4,655	10	42	0	0	109	1,116
16-Jul	2,060	46,263	1,030	5,685	17	59	0	0	265	1,381
17-Jul	2,609	48,872	1,305	6,990	21	80	0	0	337	1,718
18-Jul	1,986	50,858	992	7,982	15	95	0	0	257	1,975
19-Jul	1,078	51,936	671	8,653	11	106	0	0	242	2,217
20-Jul	914	52,850	570	9,223	9	115	0	0	205	2,422
21-Jul	884	53,734	551	9,774	9	124	0	0	199	2,621
22-Jul	1,045	54,779	239	10,013	27	151	0	0	62	2,683
23-Jul	1,322	56,101	302	10,315	34	185	0	0	78	2,761
24-Jul	1,529	57,630	350	10,665	39	224	0	0	91	2,852
25-Jul	1,302	58,932	199	10,864	47	271	0	0	35	2,887
26-Jul	1,042	59,974	160	11,024	38	309	0	0	28	2,915
27-Jul	1,214	61,188	185	11,209	44	353	0	0	33	2,948
28-Jul	1,437	62,625	143	11,352	135	488	0	0	31	2,979
29-Jul	1,168	63,793	118	11,470	110	598	0	0	25	3,004
30-Jul	1,759	65,552	178	11,648	164	762	0	0	38	3,042
31-Jul	1,245	66,797	126	11,774	117	879	0	0	26	3,068
1-Aug	1,064	67,861	166	11,940	150	1,029	0	0	8	3,076
2-Aug	892	68,753	139	12,079	127	1,156	0	0	6	3,082
3-Aug	805	69,558	126	12,205	114	1,270	0	0	6	3,088
4-Aug	597	70,155	94	12,299	85	1,355	0	0	4	3,092
5-Aug	613	70,768	129	12,428	204	1,559	0	0	0	3,092

Table 19. Cumulative proportion by date of sockeye salmon counts recorded in the Crescent River 1984 - 1997.

	Cumulative Proportion[a]													
Date	1984	1985	1986[b]	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
15-Jun	0.000	0.000												
16-Jun	0.001	0.000												
17-Jun	0.002	0.000												
18-Jun	0.003	0.000												
19-Jun	0.003	0.000												
20-Jun	0.005	0.001												
21-Jun	0.008	0.001												
22-Jun	0.012	0.001											0.001	
23-Jun	0.017	0.001											0.006	
24-Jun	0.020	0.001											0.008	0.004
25-Jun	0.024	0.001	0.000							0.010			0.011	0.014
26-Jun	0.027	0.001	0.000				0.003	0.002		0.019			0.012	0.020
27-Jun	0.036	0.002	0.000				0.007	0.004		0.022			0.013	0.029
28-Jun	0.041	0.002	0.001				0.013	0.006		0.031	0.001	0.000	0.015	0.037
29-Jun	0.049	0.005	0.005				0.021	0.010		0.034	0.002	0.000	0.018	0.049
30-Jun	0.069	0.007	0.008				0.025	0.013		0.038	0.008	0.002	0.036	0.058
01-Jul	0.081	0.008	0.017	0.012	0.008	0.008	0.034	0.017	0.045	0.056	0.012	0.002	0.060	0.067
02-Jul	0.100	0.012	0.031	0.016	0.038	0.020	0.055	0.031	0.072	0.061	0.015	0.003	0.074	0.091
03-Jul	0.118	0.016	0.054	0.020	0.149	0.043	0.065	0.033	0.096	0.077	0.017	0.006	0.087	0.153
04-Jul	0.140	0.057	0.077	0.023	0.223	0.096	0.077	0.040	0.115	0.183	0.028	0.010	0.105	0.188
05-Jul	0.156	0.138	0.084	0.027	0.269	0.129	0.098	0.061	0.138	0.239	0.035	0.012	0.129	0.214
06-Jul	0.170	0.188	0.084	0.058	0.338	0.181	0.128	0.063	0.153	0.246	0.044	0.022	0.148	0.239
07-Jul	0.184	0.196	0.110	0.084	0.404	0.231	0.141	0.064	0.159	0.258	0.061	0.029	0.161	0.267
08-Jul	0.225	0.226	0.126	0.112	0.488	0.293	0.155	0.079	0.173	0.273	0.086	0.052	0.174	0.300
09-Jul	0.268	0.251	0.134	0.160	0.554	0.334	0.184	0.090	0.192	0.297	0.092	0.082	0.181	0.348
10-Jul	0.322	0.274	0.144	0.193	0.581	0.369	0.207	0.092	0.212	0.314	0.103	0.106	0.189	0.429
11-Jul	0.360	0.293	0.154	0.243	0.598	0.412	0.264	0.100	0.243	0.353	0.132	0.132	0.197	0.500
12-Jul	0.387	0.319	0.165	0.269	0.625	0.463	0.286	0.131	0.292	0.386	0.170	0.169	0.202	0.550
13-Jul	0.409	0.364	0.184	0.305	0.655	0.502	0.299	0.143	0.335	0.423	0.214	0.204	0.262	0.581
14-Jul	0.425	0.388	0.197	0.333	0.688	0.502	0.321	0.188	0.379	0.501	0.251	0.250	0.391	0.606
15-Jul	0.454	0.415	0.204	0.370	0.692	0.518	0.345	0.245	0.424	0.580	0.276	0.281	0.471	0.625
16-Jul	0.499	0.445	0.213	0.386	0.697	0.611	0.393	0.292	0.463	0.642	0.295	0.317	0.513	0.654
17-Jul	0.548	0.480		0.406	0.717	0.674	0.472	0.355	0.512	0.685	0.368	0.364	0.551	0.691
18-Jul	0.599	0.506		0.448	0.748	0.691	0.540	0.425	0.539	0.723	0.395	0.400	0.595	0.719
19-Jul	0.639	0.525		0.513	0.771	0.710	0.574	0.461	0.573	0.752	0.425	0.417	0.653	0.734
20-Jul	0.684	0.546		0.548	0.781	0.750	0.610	0.497	0.610	0.772	0.453	0.440	0.692	0.747
21-Jul	0.721	0.573		0.593	0.808	0.776	0.653	0.524	0.653	0.797	0.460	0.494	0.729	0.759
22-Jul	0.743	0.596		0.671	0.828	0.804	0.705	0.582	0.701	0.821	0.487	0.598	0.746	0.774
23-Jul	0.783	0.632		0.773	0.853	0.829	0.742	0.649	0.772	0.845	0.542	0.660	0.757	0.793
24-Jul	0.802	0.665		0.819	0.885	0.855	0.762	0.688	0.831	0.865	0.581	0.692	0.775	0.814
25-Jul	0.813	0.698		0.856	0.917	0.884	0.801	0.718	0.877	0.883	0.602	0.725	0.812	0.833
26-Jul	0.824	0.729		0.877	0.941	0.907	0.839	0.753	0.898	0.908	0.624	0.756	0.864	0.847
27-Jul	0.838	0.756		0.893	0.959	0.930	0.864	0.801	0.912	0.925	0.665	0.778	0.893	0.865
28-Jul	0.852	0.775		0.905	0.965	0.958	0.880	0.836	0.928	0.942	0.696	0.803	0.910	0.885
29-Jul	0.870	0.794		0.915	0.976	0.968	0.896	0.866	0.948	0.953	0.727	0.834	0.924	0.901
30-Jul	0.882	0.821		0.920	0.989	0.978	0.933	0.885	0.960	0.969	0.766	0.883	0.948	0.926
31-Jul	0.893	1.000		0.938	1.000	0.994	0.956	0.916	0.974	0.981	0.827	0.897	0.965	0.944

- Continued -

Table 19. (p. 2 of 2)

	Cumulative Proportion[a]													
Date	1984	1985	1986[b]	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
01-Aug	1.000			0.960		1.000	0.973	0.966	0.987	0.990	0.875	0.907	0.985	0.959
02-Aug				0.975			0.986	0.978	1.000	1.000	0.914	0.915	1.000	0.972
03-Aug				0.985			0.993	0.984			0.928	0.939		0.983
04-Aug				0.994			1.000	0.987			0.949	0.964		0.991
05-Aug				0.996				0.992			0.975	0.980		1.000
06-Aug				1.000				0.996			0.983	0.987		
07-Aug								1.000			0.989	0.993		
08-Aug											1.000	1.000		
Midpoint	17-Jul	18-Jul		19-Jul	09-Jul	15-Jul	18-Jul	21-Jul	17-Jul	14-Jul	23-Jul	22-Jul	16-Jun	11-Jul
No. days for 80%[c]	31+	26+		21	23	22	25	21	23	23	24	23	22	27

[a] Proportion accrued on last day (1984-1986, 1988) represents that portion of the escapement estimated to have entered the river after termination of counting operations.

[b] Enumeration activities terminated on 16 July 1986. Estimated proportions from King and Tarbox (1988).

[c] Inclusive dates: date proportion of escapement reached 10% through date proportion of escapement reached 90%.

FN: 97CRCUM%.XLS

Table 20. Daily fish wheel catch by species for the Crescent River, 24 June through 5 August 1997.

		Sockeye		Pink		Chum		Coho		Chinook		Dolly Varden	
Date	Hours open	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
24-Jun	24.0	15	15	0	0	0	0	0	0	0	0	0	0
25-Jun	24.0	32	47	0	0	0	0	0	0	0	0	0	0
26-Jun	24.0	12	59	0	0	0	0	0	0	0	0	0	0
27-Jun	24.0	16	75	0	0	0	0	0	0	1	1	0	0
28-Jun	24.0	27	102	1	1	0	0	0	0	1	2	0	0
29-Jun	24.0	35	137	2	3	0	0	0	0	0	2	0	0
30-Jun	24.0	31	168	1	4	0	0	0	0	0	2	0	0
1-Jul	24.0	21	189	1	5	0	0	0	0	0	2	1	1
2-Jul	24.0	35	224	3	8	0	0	0	0	0	2	0	1
3-Jul	24.0	72	296	2	10	0	0	0	0	1	3	0	1
4-Jul	24.0	44	340	1	11	0	0	0	0	1	4	1	2
5-Jul	24.0	31	371	6	17	0	0	0	0	0	4	0	2
6-Jul	24.0	27	398	10	27	0	0	0	0	0	4	0	2
7-Jul	24.0	19	417	1	28	0	0	0	0	0	4	0	2
8-Jul	24.0	39	456	2	30	0	0	0	0	0	4	0	2
9-Jul	24.0	52	508	3	33	0	0	0	0	1	5	2	4
10-Jul	24.0	72	580	7	40	0	0	0	0	0	5	3	7
11-Jul	24.0	59	639	3	43	0	0	0	0	0	5	0	7
12-Jul	24.0	61	700	9	52	0	0	0	0	0	5	0	7
13-Jul	24.0	48	749	10	62	1	1	0	0	0	5	1	8
14-Jul	24.0	45	794	13	75	0	1	0	0	0	5	5	13
15-Jul	24.0	30	824	7	82	0	1	0	0	0	5	4	17
16-Jul	24.0	43	867	17	99	0	1	0	0	0	5	4	21
17-Jul	24.0	41	908	21	120	0	1	0	0	0	5	5	26
18-Jul	24.0	40	948	24	144	1	2	0	0	0	5	7	33
19-Jul	24.0	24	972	23	167	1	3	0	0	0	5	7	40
20-Jul	24.0	29	1,001	21	188	0	3	0	0	0	5	10	50
21-Jul	24.0	41	1,042	17	205	0	3	0	0	0	5	5	55
22-Jul	24.0	29	1,071	10	215	1	4	0	0	0	5	2	57
23-Jul	24.0	40	1,111	11	226	0	4	0	0	0	5	3	60
24-Jul	24.0	49	1,160	6	232	2	6	0	0	0	5	2	62
25-Jul	24.0	41	1,201	6	238	2	8	0	0	0	5	1	63
26-Jul	24.0	29	1,230	5	243	0	8	0	0	0	5	1	64
27-Jul	24.0	41	1,271	6	249	2	10	0	0	0	5	1	65
28-Jul	24.0	38	1,309	4	253	4	14	0	0	0	5	2	67
29-Jul	24.0	27	1,336	4	257	2	16	0	0	0	5	1	68
30-Jul	24.0	32	1,368	4	261	5	21	0	0	0	5	0	68
31-Jul	24.0	42	1,410	2	263	2	23	0	0	0	5	0	68
1-Aug	24.0	46	1,456	2	265	2	25	0	0	0	5	0	68
2-Aug	24.0	33	1,489	13	278	2	27	0	0	0	5	1	69
3-Aug	24.0	34	1,523	0	278	8	35	0	0	0	5	0	69
4-Aug	24.0	28	1,551	7	285	8	43	0	0	0	5	0	69
5-Aug	24.0	24	1,575	5	290	8	51	0	0	0	5	0	69

FN: 97CR2FWR.xls

Table 21. Age composition of sockeye salmon collected in the Crescent River 1979-1997.

	Percentage Compostion by Age Class[a,b]								
Year	1.1	1.2	1.3	1.4	2.1	2.2	2.3	Other	Sample Size
1979	tr	27.8	70.1	0.0	0.0	tr	tr	tr	643
1980	0.0	6.5	86.9	0.0	0.0	2.9	1.6	2.1	511
1981	0.0	8.2	32.1	0.0	0.0	9.6	49.9	tr	1,117
1982	0.0	12.9	79.2	0.1	0.0	0.8	7.0	0.0	711
1983	0.0	10.9	42.2	0.2	0.7	27.4	18.6	0.0	731
1984	0.0	3.5	16.9	0.0	0.0	20.0	59.4	tr	780
1985	0.2	4.7	31.3	0.0	0.3	20.5	43.0	0.0	594
1986	0.0	6.5	15.8	0.0	0.0	13.0	64.0	0.7	139
1987	0.0	2.6	47.7	0.0	0.0	4.2	45.0	0.5	191
1988	0.0	10.4	44.9	0.5	0.1	17.8	26.1	0.1	741
1989	0.0	2.6	84.2	0.6	0.0	0.6	15.0	0.1	728
1990	0.0	3.7	48.5	0.4	0.1	3.5	43.2	0.5	591
1991	0.0	14.9	50.4	0.3	0.0	16.8	16.5	1.1	357
1992	0.0	2.6	21.7	0.0	0.0	12.4	61.9	1.6	194
1993	0.2	8.8	37.2	0.0	0.9	5.8	46.9	0.2	465
1994	0.2	6.6	49.6	0.4	0.4	12.3	30.5	0.2	547
1995	0.4	9.2	18.4	0.6	0.2	9.4	61.7	0.2	543
1996	0.0	15.2	25.4	0.0	0.0	22.9	35.0	0.5	394
1997	0.0	10.6	56.0	0.0	0.2	6.6	26.6	0.0	640

[a] Percentages weighted by total numbers in the escapement: 1979-1981, 1986-1997.

[b] 1979-1997 from Waltemyer, ADF&G, Soldotna.

Table 22. Length composition of the major age classes of sockeye salmon collected in the Crescent River 1980-1997. Length measured from mid-eye to fork-of-tail.

		Male			Female			
Year	Age Class	Ave Length[a] (mm)	Stndrd Error	Sample Size	Ave Length[a] (mm)	Stndrd Error	Sample Size	Ratio Male-Female
1997	0.3	569	4	51	544	5	31	1.7:1
1980	1.2	472	6	47	471	7	31	1.5:1
1981		522	9	59	491	9	33	1.8:1
1982		467	6	47	487	7	25	1.9:1
1991		517	6	36	490	8	17	2.1:1
1996		477	6	41	510	7	19	2.2:1
1997		511	3	81	495	3	82	1.0:1
1980	1.3	568	2	167	549	2	223	0.7:1
1981		576	3	121	555	3	172	0.7:1
1982		586	1	303	556	1	259	1.2:1
1983		570	2	111	542	2	169	0.7:1
1984		574	5	60	552	2	72	0.8:1
1985		565	4	75	551	2	111	0.7:1
1987		601	3	54	573	3	37	1.5:1
1988		581	2	195	550	2	138	1.4:1
1989		593	1	320	561	2	271	1.2:1
1990		592	3	184	571	0	120	1.5:1
1991		560	3	105	543	3	75	1.4:1
1992		555	9	24	535	5	18	1.3:1
1993		578	3	81	559	2	92	0.9:1
1994		563	2	124	547	2	147	0.8:1
1995		581	4	40	555	2	60	0.7:1
1996		607	5	50	586	4	50	1.0:1
1997		574	2	142	547	2	119	1.2:1
1981	2.2	487	6	40	519	5	57	0.7:1
1983		494	4	93	488	3	89	1.0:1
1984		499	4	81	507	4	75	1.1:1
1985		496	5	75	490	4	47	1.6:1
1988		487	5	72	496	4	60	1.2:1
1991		515	5	42	498	6	18	2.3:1
1992		486	12	10	492	5	14	0.7:1
1994		466	4	54	481	6	13	4.2:1
1996		497	5	65	525	5	29	2.2:1
1980	2.3	584	2	158	554	2	237	0.7:1
1983		569	4	43	550	2	80	0.5:1
1984		581	2	261	553	2	202	1.3:1
1985		568	4	94	551	2	161	0.6:1
1986		573	5	44	556	3	45	1.0:1
1987		595	4	49	573	3	37	1.3:1
1988		585	3	110	556	2	83	1.3:1
1989		594	3	72	568	3	37	1.9:1
1990		601	0	165	571	0	72	2.3:1
1991		558	4	36	537	4	23	1.6:1
1992		572	4	58	547	3	62	0.9:1
1993		585	2	104	558	2	114	0.9:1
1994		570	2	86	549	3	81	1.1:1
1995		581	2	154	553	2	181	0.9:1
1996		604	4	222	577	3	72	3.1:1
1997		590	3	84	569	2	86	1.0:1

[a]1980-1997 from Waltemyer, ADF&G, Soldotna.

FN: CRLECOMP.XLS

Table 23. Estimated salmon escapment into the Yentna River, 6 July through 12 August 1997. Species composition of daily sonar counts based on fish wheel catches.

	Sockeye		Pink		Chum		Coho		Chinook	
Date	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
6-Jul	362	362	126	126	1	1	9	9	21	21
7-Jul	296	658	92	218	1	2	6	15	17	38
8-Jul	364	1,022	122	340	1	3	9	24	21	59
9-Jul	348	1,370	152	492	3	6	14	38	17	76
10-Jul	364	1,734	160	652	3	9	15	53	18	94
11-Jul	320	2,054	160	812	2	11	14	67	20	114
12-Jul	435	2,489	138	950	3	14	20	87	16	130
13-Jul	2,318	4,807	133	1,083	15	29	68	155	7	137
14-Jul	8,964	13,771	303	1,386	12	41	88	243	13	150
15-Jul	9,798	23,569	283	1,669	93	134	42	285	3	153
16-Jul	7,522	31,091	347	2,016	22	156	203	488	4	157
17-Jul	5,109	36,200	286	2,302	52	208	443	931	4	161
18-Jul	3,933	40,133	348	2,650	132	340	175	1,106	0	161
19-Jul	4,018	44,151	622	3,272	185	525	253	1,359	0	161
20-Jul	5,642	49,793	356	3,628	97	622	532	1,891	0	161
21-Jul	8,156	57,949	445	4,073	73	695	443	2,334	0	161
22-Jul	10,491	68,440	1,309	5,382	338	1,033	395	2,729	0	161
23-Jul	9,278	77,718	993	6,375	290	1,323	604	3,333	0	161
24-Jul	8,184	85,902	1,057	7,432	560	1,883	582	3,915	9	170
25-Jul	9,807	95,709	1,285	8,717	999	2,882	1,326	5,241	0	170
26-Jul	9,757	105,466	1,355	10,072	713	3,595	949	6,190	8	178
27-Jul	4,489	109,955	1,250	11,322	1,108	4,703	590	6,780	39	217
28-Jul	4,053	114,008	1,220	12,542	659	5,362	561	7,341	0	217
29-Jul	3,299	117,307	2,591	15,133	911	6,273	508	7,849	0	217
30-Jul	3,795	121,102	2,335	17,468	704	6,977	773	8,622	0	217
31-Jul	4,403	125,505	1,463	18,931	606	7,583	467	9,089	0	217
1-Aug	4,902	130,407	1,403	20,334	643	8,226	638	9,727	0	217
2-Aug	4,056	134,463	1,032	21,366	346	8,572	700	10,427	54	271
3-Aug	2,899	137,362	1,450	22,816	415	8,987	830	11,257	3	274
4-Aug	3,629	140,991	1,389	24,205	923	9,910	295	11,552	0	274
5-Aug	2,753	143,744	1,184	25,389	777	10,687	616	12,168	23	297
6-Aug	1,916	145,660	791	26,180	414	11,101	450	12,618	0	297
7-Aug	1,291	146,951	594	26,774	258	11,359	209	12,827	0	297
8-Aug	2,170	149,121	359	27,133	349	11,708	133	12,960	0	297
9-Aug	2,511	151,632	417	27,550	162	11,870	158	13,118	0	297
10-Aug	3,271	154,903	664	28,214	232	12,102	306	13,424	0	297
11-Aug	1,666	156,569	667	28,881	449	12,551	191	13,615	0	297
12-Aug	1,253	157,822	79	28,960	120	12,671	55	13,670	0	297

Table 24. Estimated salmon escapement into the Yentna River 1981-1997.

Date	Sockeye	Pink	Chum	Coho	Chinook	Total
1981	139,401	36,054	19,765	17,017	9	212,246
1982	113,847	447,167	27,830	34,089		622,933
1983	104,414	60,661	10,802	8,867		184,744
1984	149,375	369,299	26,508	18,172		563,354
1985	107,124	120,990	12,092	9,181	404	249,791
1986	92,076	673,901	56,656	23,457	1,112	847,202
1987	66,054	84,099	17,859	6,279	407	174,698
1988	52,330	137,027	49,074	12,173	444	251,048
1989	96,269	173,698	63,379	25,695	393	359,434
1990	140,290	244,569	33,566	21,346	607	440,378
1991	109,632	75,377	21,655	57,275	204	264,143
1992	66,083	239,378	30,062	29,073	107	364,703
1993	141,694	227,171	28,021	37,752	363	435,001
1994	128,032	79,178	18,971	25,173	226	251,580
1995	121,220	103,990	31,473	74,406	346	331,435
1996	90,660	98,236	21,056	35,420	345	245,717
1997	157,822	28,960	12,671	13,670	297	213,420

FN: YEHIST.XLS

Table 25. Salmon escapement observations in selected Susitna River tributaries 1997.

	Number of Fish Observed or Estimated				
	Sockeye	Pink	Chum	Coho	Chinook
Chelatna Lake[a]	27,284	25	2	51	167
Deception Creek[b]					1,340
Rabideux Creek[b]				114	
Birch Creek[b]				217	
Question Creek[b]				186	
Answer Creek[b]				57	
Goose Creek[b]					308
Little Willow Creek[b]					2,390
Montana Creek[b]					3,073
Prairie Creek[b]					7,710
Sheep Creek[b]					no ct
Willow Creek[b]					4,841
Alexander Creek[b]					5,598
Deshka River[b]	614	1,101	12	8,063	35,587
Peters Creek[b]					2,637
Lake Creek[b]					3,841
Cache Creek[b]					1,774
Talachulitna River[b]					4,494

[a] Fandrei, G., Cook Inlet Aquaculture Association, personal communication.

[b] Whitmore, C. and Sweet, D., 1997.

Table 26. Cumulative proportion by date of sockeye salmon counts recorded in the Yentna River 1981-1997.

	Cumulative Proportion[a]																
Date	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
27-Jun		0.000															
28-Jun		0.000															
29-Jun	0.001	0.000				0.001											
30-Jun	0.004	0.000	0.000			0.002											
01-Jul	0.008	0.001	0.001	0.001	0.000	0.002	0.000										
02-Jul	0.013	0.001	0.001	0.001	0.001	0.003	0.001										
03-Jul	0.016	0.001	0.002	0.002	0.001	0.003	0.001										
04-Jul	*0.017*	*0.002*	*0.003*	*0.003*	*0.001*	*0.004*	*0.002*										
05-Jul	0.018	0.002	0.003	0.004	0.001	0.005	0.002										
06-Jul	0.020	0.002	0.004	0.004	0.002	0.005	0.003										0.002
07-Jul	0.021	0.002	0.004	0.005	0.003	0.006	0.003	0.004	0.003	0.002	0.000	0.002	0.001	0.002	0.001	0.001	0.004
08-Jul	0.023	0.002	0.004	0.005	0.003	0.006	0.004	0.008	0.006	0.005	0.001	0.003	0.002	0.004	0.001	0.003	0.006
09-Jul	0.026	0.002	0.005	0.006	0.004	0.007	0.004	0.012	0.009	0.008	0.001	0.005	0.004	0.008	0.002	0.005	0.009
10-Jul	0.056	0.002	0.005	0.007	0.005	0.008	0.005	0.016	0.012	0.010	0.002	0.007	0.005	0.010	0.003	0.007	0.011
11-Jul	0.092	0.003	0.006	0.009	0.006	0.009	0.005	0.019	0.014	0.013	0.002	0.008	0.006	0.013	0.004	0.007	0.013
12-Jul	0.155	0.003	0.008	0.011	0.007	0.010	0.005	0.022	0.015	0.014	0.002	0.010	0.007	0.016	0.005	0.009	0.016
13-Jul	0.230	0.003	0.011	0.012	0.008	0.011	0.006	0.025	0.016	0.016	0.003	0.012	0.008	0.020	0.006	0.011	0.030
14-Jul	0.344	0.003	0.034	0.015	0.009	0.011	0.007	0.029	0.019	0.017	0.003	0.016	0.009	0.022	0.006	0.013	0.087
15-Jul	0.454	0.004	0.059	0.017	0.010	0.014	0.008	0.034	0.023	0.019	0.004	0.022	0.014	0.024	0.007	0.022	0.149
16-Jul	0.521	0.005	0.096	0.023	0.010	0.022	0.010	0.039	0.026	0.020	0.005	0.035	0.134	0.026	0.007	0.131	0.197
17-Jul	0.563	0.016	0.131	0.142	0.011	0.027	0.014	0.043	0.051	0.022	0.005	0.062	0.284	0.029	0.012	0.348	0.229
18-Jul	0.599	0.043	0.179	0.232	0.012	0.036	0.020	0.046	0.103	0.025	0.009	0.086	0.360	0.056	0.022	0.519	0.254
19-Jul	0.638	0.155	0.351	0.345	0.013	0.041	0.027	0.090	0.161	0.105	0.028	0.120	0.382	0.115	0.068	0.614	0.280
20-Jul	0.681	0.329	0.567	0.458	0.014	0.042	0.034	0.197	0.202	0.217	0.100	0.148	0.420	0.167	0.160	0.671	0.316
21-Jul	0.732	0.527	0.693	0.554	0.014	0.043	0.047	0.269	0.234	0.284	0.193	0.184	0.464	0.250	0.251	0.702	0.367
22-Jul	0.801	0.627	0.722	0.626	0.016	0.052	0.059	0.303	0.280	0.327	0.302	0.229	0.513	0.297	0.335	0.745	0.434
23-Jul	0.846	0.665	0.758	0.681	0.019	0.162	0.107	0.375	0.359	0.383	0.378	0.296	0.574	0.333	0.378	0.784	0.492
24-Jul	0.882	0.711	0.786	0.755	0.145	0.193	0.218	0.484	0.453	0.452	0.425	0.373	0.647	0.397	0.426	0.822	0.544

- Continued _

Table 26. (p. 2 of 3)

Date	Cumulative Proportion[a]																
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
25-Jul	0.905	0.734	0.824	0.785	0.359	0.253	0.331	0.630	0.532	0.505	0.451	0.447	0.709	0.426	0.496	0.856	0.606
26-Jul	0.925	0.780	0.867	0.808	0.507	0.371	0.442	0.771	0.646	0.573	0.505	0.519	0.763	0.517	0.580	0.880	0.668
27-Jul	0.940	0.811	0.894	0.836	0.636	0.491	0.528	0.821	0.749	0.667	0.575	0.606	0.810	0.557	0.678	0.899	0.697
28-Jul	0.950	0.831	0.905	0.855	0.782	0.606	0.587	0.858	0.799	0.734	0.637	0.674	0.831	0.599	0.743	0.913	0.722
29-Jul	0.958	0.847	0.913	0.866	0.903	0.752	0.625	0.886	0.854	0.769	0.674	0.734	0.857	0.662	0.796	0.928	0.743
30-Jul	0.969	0.859	0.921	0.874	0.942	0.831	0.655	0.916	0.864	0.796	0.720	0.794	0.893	0.712	0.832	0.941	0.767
31-Jul	0.976	0.890	0.925	0.885	0.960	0.861	0.686	0.937	0.868	0.825	0.754	0.825	0.927	0.750	0.852	0.943	0.795
01-Aug	0.980	0.933	0.929	0.893	0.970	0.882	0.709	0.946	0.873	0.859	0.779	0.858	0.938	0.788	0.875	0.948	0.826
02-Aug	0.986	0.948	0.937	0.901	0.978	0.908	0.750	0.960	0.879	0.907	0.806	0.881	0.950	0.830	0.897	0.954	0.852
03-Aug	0.988	0.955	0.941	0.909	0.983	0.917	0.789	0.969	0.889	0.947	0.850	0.896	0.967	0.862	0.915	0.965	0.870
04-Aug	0.990	0.962	0.945	0.920	0.987	0.924	0.825	0.975	0.907	0.962	0.891	0.910	0.985	0.889	0.928	0.981	0.893
05-Aug	0.991	0.965	0.949	0.926	0.990	0.935	0.857	0.981	0.923	0.971	0.930	0.915	0.992	0.919	0.944	0.991	0.911
06-Aug	0.992	0.967	0.953	0.934	0.994	0.940	0.875	0.984	0.936	0.978	0.942	0.922	0.996	0.942	0.975	0.996	0.923
07-Aug	0.992	0.970	0.955	0.939	0.997	1.000	0.889	0.989	0.944	0.985	0.959	0.929	1.000	0.962	0.990	1.000	0.931
08-Aug	0.992	0.972	0.958	0.944	1.000		0.900	0.992	0.949	0.990	0.975	0.941		0.974	0.992		0.945
09-Aug	0.993	0.975	0.959	0.949			0.932	0.994	0.954	0.994	0.986	0.966		0.984	0.996		0.961
10-Aug	0.994	0.977	0.959	0.954			0.962	0.996	0.958	0.995	0.994	0.984		0.992	1.000		0.982
11-Aug	0.995	0.979	0.962	0.958			0.986	1.000	0.962	0.998	0.999	1.000		0.996			0.992
12-Aug	0.996	0.981	0.968	0.962			0.996		0.966	1.000	1.000			1.000			1.000
13-Aug	0.997	0.982	0.974	0.965			1.000		0.975								
14-Aug	0.997	0.984	0.977	0.968					0.985								
15-Aug	0.998	0.985	0.979	0.970					0.992								
16-Aug	0.998	0.986	0.982	0.973					0.995								
17-Aug	0.998	0.987	0.985	0.975					0.997								
18-Aug	0.998	0.988	0.987	0.977					0.998								
19-Aug	0.998	0.989	0.988	0.979					0.999								
20-Aug	0.999	0.990	0.990	0.980					1.000								
21-Aug	0.999	0.990	0.991	0.981													

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Table 26. (p. 3 of 3)

	Cumulative Proportion[a]																
Date	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
22-Aug	0.999	0.990	0.992	0.984													
23-Aug	0.999	0.991	0.993	0.987													
24-Aug	1.000	0.992	0.994	0.989													
25-Aug		0.993	0.994	0.992													
26-Aug		0.994	0.995	0.994													
27-Aug		0.994	0.996	0.996													
28-Aug		0.995	0.997	0.996													
29-Aug		0.996	0.998	0.998													
30-Aug		0.997	0.998	0.999													
31-Aug		0.997	0.999	0.999													
01-Sep		0.998	0.999	1.000													
02-Sep		0.999	0.999														
03-Sep		0.999	0.999														
04-Sep		1.000	1.000														
05-Sep																	
Midpoint	16-Jul	21-Jul	20-Jul	21-Jul	26-Jul	28-Jul	27-Jul	25-Jul	25-Jul	25-Jul	26-Jul	26-Jul	22-Jul	26-Jul	26-Jul	18-Jul	24-Jul
No. days for 80%[b]	14	14	12	17	6	11+	17	11	18	15	17	17	16	19	15	13	22

[a] Proportion accrued on last day (1986) represents that portion of the escapement estimated after enumeration operations.

[b] Inclusive dates: date proportion of escapement reached 10% through date proportion of escapement reached 90%.

Table 27. Daily adjusted fish wheel catch by species for the north bank of the Yentna River, 6 July through 12 August 1997.

		Sockeye		Pink		Chum		Coho		Chinook	
Date	Hours open[a]	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
06-Jul	23.1	17	17	1	1	0	0	0	0	2	2
07-Jul	22.2	18	35	5	6	0	0	0	0	2	4
08-Jul	22.7	11	46	8	14	0	0	0	0	0	4
09-Jul	25.5	11	57	3	17	0	0	0	0	1	5
10-Jul	22.4	4	61	13	30	0	0	0	0	1	6
11-Jul	25.0	11	72	9	39	0	0	1	1	1	7
12-Jul	22.8	24	96	12	51	1	1	3	4	0	7
13-Jul	23.8	43	139	10	61	1	2	6	10	1	8
14-Jul	22.5	129	268	19	80	2	4	1	11	2	10
15-Jul	24.5	67	335	15	95	1	5	2	13	1	11
16-Jul	22.0	42	377	3	98	1	6	1	14	0	11
17-Jul	25.4	137	514	20	118	3	9	3	17	0	11
18-Jul	23.8	85	599	18	136	2	11	1	18	0	11
19-Jul	18.5	57	656	39	175	10	21	4	22	0	11
20-Jul	19.6	83	739	40	215	6	27	15	37	0	11
21-Jul	21.3	50	789	33	248	10	37	9	46	0	11
22-Jul	25.7	75	864	55	303	17	54	7	53	0	11
23-Jul	23.9	112	976	88	391	19	73	3	56	0	11
24-Jul	23.2	154	1,130	72	463	34	107	13	69	1	12
25-Jul	21.8	119	1,249	63	526	42	149	34	103	0	12
26-Jul	16.5	154	1,403	89	615	49	198	29	132	1	13
27-Jul	24.6	74	1,477	59	674	23	221	17	149	0	13
28-Jul	24.7	69	1,546	76	750	44	265	22	171	0	13
29-Jul	20.7	61	1,607	131	881	45	310	17	188	0	13
30-Jul	28.0	50	1,657	117	998	43	353	21	209	0	13
31-Jul	23.3	41	1,698	73	1,071	20	373	7	216	0	13
01-Aug	19.8	45	1,743	94	1,165	24	397	5	221	0	13
02-Aug	24.9	30	1,773	51	1,216	22	419	12	233	0	13
03-Aug	26.1	43	1,816	43	1,259	10	429	13	246	1	14
04-Aug	24.0	42	1,858	74	1,333	24	453	3	249	0	14
05-Aug	22.2	43	1,901	53	1,386	21	474	12	261	0	14
06-Aug	15.9	38	1,939	33	1,419	7	481	6	267	0	14
07-Aug	24.1	38	1,977	41	1,460	16	497	8	275	0	14
08-Aug	24.8	40	2,017	37	1,497	14	511	7	282	0	14
09-Aug	22.0	61	2,078	61	1,558	11	522	8	290	0	14
10-Aug	24.6	81	2,159	64	1,622	19	541	12	302	0	14
11-Aug	23.2	123	2,282	137	1,759	27	568	11	313	0	14
12-Aug	15.3	191	2,473	33	1,792	14	582	8	321	0	14

[a] Fish wheel catch adjusted for 24 h: (daily catch * 24 h) / hours open. Actual catch by species: 2,294 sockeye salmon; 1,610 pink salmon; 551 chum salmon; 301 coho salmon; 14 chinook salmon; 80 whitefish; 6 long-nosed sucker.

FN: 97YE1FWR.XLS

Table 28. Daily adjusted fish wheel catch by species for the south bank of the Yentna River, 6 July through 12 August 1997.

		Sockeye		Pink		Chum		Coho		Chinook	
Date	Hours open[a]	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
06-Jul	23.3	61	61	16	16	0	0	1	1	1	1
07-Jul	23.8	56	117	8	24	0	0	0	1	4	5
08-Jul	22.6	41	158	12	36	0	0	1	2	3	8
09-Jul	25.3	41	199	16	52	0	0	3	5	2	10
10-Jul	22.5	45	244	18	70	1	1	2	7	2	12
11-Jul	24.5	41	285	17	87	0	1	0	7	1	13
12-Jul	20.5	137	422	21	108	1	2	7	14	1	14
13-Jul	14.6	741	1,163	25	133	3	5	20	34	0	14
14-Jul	7.2	1,814	2,977	40	173	0	5	13	47	0	14
15-Jul	4.8	1,707	4,684	35	208	15	20	5	52	0	14
16-Jul	4.5	765	5,449	21	229	0	20	21	73	0	14
17-Jul	3.9	833	6,282	25	254	6	26	86	159	0	14
18-Jul	8.3	369	6,651	12	266	9	35	17	176	0	14
19-Jul	5.5	622	7,273	53	319	22	57	44	220	0	14
20-Jul	2.9	1,779	9,052	50	369	17	74	157	377	0	14
21-Jul	4.1	1,295	10,347	46	415	6	80	64	441	0	14
22-Jul	3.0	1,133	11,480	102	517	24	104	39	480	0	14
23-Jul	2.6	1,752	13,232	101	618	37	141	119	599	0	14
24-Jul	2.6	1,226	14,458	74	692	46	187	84	683	0	14
25-Jul	2.6	1,394	15,852	73	765	73	260	147	830	0	14
26-Jul	2.9	1,382	17,234	99	864	49	309	115	945	0	14
27-Jul	4.0	601	17,835	125	989	143	452	71	1,016	6	20
28-Jul	4.2	720	18,555	156	1,145	81	533	86	1,102	0	20
29-Jul	3.8	653	19,208	397	1,542	141	674	90	1,192	0	20
30-Jul	3.5	624	19,832	247	1,789	62	736	110	1,302	0	20
31-Jul	3.5	789	20,621	178	1,967	89	825	82	1,384	0	20
01-Aug	4.0	693	21,314	143	2,110	78	903	90	1,474	0	20
02-Aug	3.6	1,061	22,375	183	2,293	61	964	169	1,643	14	34
03-Aug	3.8	532	22,907	232	2,525	63	1,027	150	1,793	0	34
04-Aug	3.8	664	23,571	207	2,732	157	1,184	50	1,843	0	34
05-Aug	5.8	417	23,988	121	2,853	104	1,288	96	1,939	4	38
06-Aug	5.4	431	24,419	157	3,010	90	1,378	103	2,042	0	38
07-Aug	7.4	284	24,703	107	3,117	52	1,430	45	2,087	0	38
08-Aug	7.4	360	25,063	32	3,149	55	1,485	19	2,106	0	38
09-Aug	7.9	571	25,634	39	3,188	24	1,509	30	2,136	0	38
10-Aug	3.6	935	26,569	121	3,309	47	1,556	81	2,217	0	38
11-Aug	8.3	282	26,851	41	3,350	81	1,637	35	2,252	0	38
12-Aug	8.3	329	27,180	3	3,353	35	1,672	15	2,267	0	38

[a] Fish wheel catch adjusted for 24 h: (daily catch * 24 h) / hours open. Actual catch by species: 5,431 sockeye salmon; 672 pink salmon; 317 chum salmon; 397 coho salmon; 18 chinook salmon; 14 whitefish; 5 long-nosed sucker; 1 rainbow trout.

FN: 97YE2FWR.XLS

Table 29. Age composition of sockeye salmon collected in the Yentna River 1986-1997.

	Percentage Compostion by Age Class[a, b]											
Year	0.2	0.3	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.2	Sample Size
1986	0.0	2.1	1.9	22.7	56.5	0.2	0.6	5.9	10.0	0.1		492
1987	1.3	2.4	0.9	23.3	50.6	1.0	0.0	8.6	11.7	0.0		1,089
1988	2.7	2.4	0.4	33.5	41.9	0.2	1.7	6.5	10.4	0.1		1,727
1989	0.2	0.2	1.3	27.2	63.5	0.4	0.2	3.0	4.0	0.0		1,362
1990	0.8	2.4	0.3	29.9	47.6	0.7	0.1	9.8	8.2	0.1		1,710
1991	2.0	10.1	0.1	25.2	44.1	0.1	0.1	7.0	11.1	0.1		1,509
1992	1.6	0.6	1.0	31.1	29.6	0.1	0.4	16.9	18.3	0.1	0.4	1,451
1993	1.0	4.6	0.1	32.1	35.5	0.0	0.4	11.7	14.5	0.1	0.0	1,390
1994	1.3	3.9	0.6	23.2	43.2	0.2	0.0	9.7	17.6	0.0	0.0	637
1995	2.2	5.1	0.8	19.7	51.3	0.4	0.2	8.5	11.6	0.0	0.2	507
1996	3.2	3.2	0.4	25.5	43.8	0.0	0.4	9.4	14.0	0.0	0.0	466
1997	1.1	10.5	0.1	32.4	43.7	0.1	0.1	4.7	7.2	0.0	0.0	534

[a] Percentages weighted by total numbers in the escapement: 1979-1981, 1986-1997.

[b] 1986-1997 from Waltemyer, ADF&G, Soldotna.

Table 30. Length composition of the major age classes of sockeye salmon collected in the Yentna River 1986-1997. Length measured from mid-eye to fork- of- tail.

		Male			Female			
Year	Age Class	Ave Length[a] (mm)	Stndrd Error	Sample Size	Ave Length[a] (mm)	Stndrd Error	Sample Size	Ratio Male-Female
1991	0.3	572	5	59	550	2	100	0.6:1
1997		598	5	41	559	4	38	1.1:1
1986	1.2	455	3	104	472	5	52	2.0:1
1987		484	3	158	477	2	156	1.0:1
1988		461	2	408	486	3	170	2.4:1
1989		463	4	246	485	4	122	2.0:1
1990		446	0	305	446	0	238	1.3:1
1991		460	3	253	484	2	130	2.0:1
1992		443	2	360	469	3	115	3.1:1
1993		465	2	279	494	2	167	1.7:1
1994		468	3	107	484	5	41	2.6:1
1995		460	4	58	472	6	42	1.4:1
1996		463	5	78	469	7	41	1.9:0
1997		479	4	110	479	3	133	0.8:1
1986	1.3	579	3	172	563	2	216	0.8:1
1987		591	2	246	565	2	222	1.1:1
1988		580	2	365	552	1	359	1.0:1
1989		575	3	390	553	1	474	0.8:1
1990		573	0	400	552	0	526	0.7:1
1991		562	2	301	542	1	356	0.9:1
1992		546	4	188	543	2	242	0.8:1
1993		561	2	288	549	1	266	0.9:1
1994		596	3	133	561	2	142	0.9:1
1995		568	3	124	545	2	136	0.9:1
1996		589	3	107	568	2	97	1.1:1
1997		585	2	155	555	2	173	0.9:1
1992	2.2	451	3	181	471	6	53	3.4:1
1993		476	4	93	487	3	69	1.3:1
1986	2.3	588	5	25	555	4	44	0.6:1
1987		583	4	62	566	3	52	1.2:1
1988		585	4	92	554	3	87	1.1:1
1990		574	0	73	542	0	96	0.8:1
1991		561	4	78	536	3	86	0.9:1
1992		564	3	123	538	4	126	1.0:1
1993		562	3	74	544	2	128	0.6:1
1994		600	5	56	561	2	56	1.0:1
1995		578	4	25	544	3	34	0.7:1
1996		585	5	31	558	4	34	0.9:1

[a] 1986-1997 from Waltemyer, ADF&G, Soldotna.

FN: YELECOMP.XLS

Table 31. Cumulative proportion by date of pink salmon counts recorded in the Yentna River 1981-1997.

	Cumulative Proportion																
Date	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
27-Jun		0.000															
28-Jun		0.000															
29-Jun	0.000	0.000				0.000	0.000										
30-Jun	0.002	0.000	0.000			0.000	0.000										
01-Jul	0.003	0.000	0.001	0.000	0.001	0.000	0.002										
02-Jul	0.005	0.000	0.001	0.000	0.002	0.000	0.004										
03-Jul	0.007	0.000	0.001	0.000	0.003	0.000	0.008										
04-Jul	0.008	0.000	0.002	0.000	0.003	0.000	0.011										
05-Jul	0.008	0.000	0.003	0.000	0.005	0.001	0.015										
06-Jul	0.011	0.000	0.003	0.000	0.007	0.001	0.018										
07-Jul	0.015	0.000	0.003	0.000	0.011	0.001	0.022	0.000	0.003	0.000	0.002	0.000	0.001	0.000	0.002	0.000	0.004
08-Jul	0.021	0.000	0.003	0.000	0.012	0.001	0.025	0.000	0.008	0.000	0.005	0.000	0.002	0.001	0.003	0.000	0.008
09-Jul	0.025	0.000	0.004	0.000	0.015	0.001	0.029	0.000	0.013	0.000	0.006	0.001	0.004	0.002	0.005	0.000	0.012
10-Jul	0.037	0.000	0.004	0.000	0.018	0.001	0.031	0.000	0.018	0.000	0.007	0.001	0.005	0.002	0.008	0.000	0.017
11-Jul	0.039	0.000	0.005	0.001	0.021	0.001	0.035	0.000	0.026	0.000	0.009	0.001	0.006	0.003	0.010	0.000	0.023
12-Jul	0.039	0.000	0.006	0.001	0.025	0.001	0.041	0.000	0.034	0.000	0.010	0.001	0.007	0.004	0.013	0.000	0.028
13-Jul	0.042	0.000	0.009	0.001	0.030	0.001	0.047	0.000	0.043	0.001	0.012	0.001	0.008	0.006	0.015	0.000	0.033
14-Jul	0.050	0.000	0.030	0.001	0.033	0.002	0.051	0.000	0.052	0.001	0.014	0.002	0.009	0.007	0.018	0.000	0.037
15-Jul	0.057	0.000	0.039	0.001	0.038	0.003	0.056	0.001	0.058	0.001	0.016	0.002	0.011	0.008	0.021	0.000	0.048
16-Jul	0.061	0.000	0.056	0.001	0.042	0.007	0.065	0.001	0.060	0.001	0.018	0.003	0.134	0.011	0.025	0.002	0.058
17-Jul	0.062	0.001	0.098	0.003	0.046	0.011	0.075	0.001	0.071	0.002	0.019	0.005	0.284	0.018	0.044	0.006	0.070
18-Jul	0.072	0.002	0.171	0.008	0.050	0.014	0.088	0.001	0.105	0.002	0.027	0.009	0.360	0.049	0.075	0.009	0.079
19-Jul	0.082	0.010	0.288	0.023	0.053	0.015	0.099	0.002	0.158	0.014	0.063	0.017	0.382	0.095	0.120	0.015	0.092
20-Jul	0.105	0.021	0.400	0.067	0.056	0.016	0.110	0.005	0.196	0.030	0.092	0.028	0.420	0.139	0.159	0.023	0.113
21-Jul	0.132	0.040	0.511	0.126	0.060	0.017	0.135	0.013	0.224	0.050	0.120	0.050	0.464	0.210	0.206	0.035	0.125
22-Jul	0.158	0.056	0.565	0.190	0.064	0.021	0.156	0.019	0.255	0.084	0.151	0.078	0.513	0.293	0.248	0.061	0.141
23-Jul	0.236	0.078	0.638	0.277	0.078	0.059	0.180	0.032	0.287	0.132	0.180	0.126	0.574	0.354	0.301	0.111	0.186
24-Jul	0.311	0.126	0.704	0.365	0.135	0.125	0.222	0.061	0.349	0.190	0.216	0.212	0.647	0.467	0.377	0.174	0.220
25-Jul	0.398	0.162	0.743	0.420	0.226	0.222	0.307	0.129	0.420	0.263	0.257	0.322	0.709	0.548	0.460	0.256	0.257
26-Jul	0.464	0.192	0.791	0.466	0.329	0.369	0.407	0.231	0.493	0.342	0.308	0.459	0.763	0.628	0.533	0.319	0.301
27-Jul	0.512	0.237	0.820	0.510	0.475	0.535	0.537	0.338	0.570	0.433	0.361	0.561	0.810	0.693	0.596	0.404	0.348
28-Jul	0.580	0.330	0.842	0.578	0.636	0.695	0.624	0.459	0.638	0.514	0.441	0.668	0.831	0.741	0.671	0.514	0.391
29-Jul	0.639	0.447	0.855	0.669	0.763	0.830	0.668	0.589	0.691	0.580	0.499	0.751	0.857	0.796	0.732	0.631	0.433
30-Jul	0.705	0.562	0.864	0.728	0.833	0.894	0.701	0.662	0.730	0.640	0.567	0.815	0.893	0.854	0.781	0.727	0.523
31-Jul	0.752	0.654	0.871	0.784	0.877	0.924	0.729	0.722	0.748	0.722	0.640	0.862	0.927	0.906	0.812	0.737	0.603
01-Aug	0.795	0.735	0.879	0.837	0.903	0.957	0.741	0.768	0.759	0.815	0.677	0.899	0.938	0.937	0.847	0.757	0.654
02-Aug	0.819	0.824	0.903	0.873	0.926	0.979	0.767	0.826	0.770	0.884	0.703	0.924	0.959	0.958	0.886	0.792	0.702
03-Aug	0.834	0.896	0.908	0.903	0.942	0.991	0.799	0.878	0.781	0.927	0.751	0.941	0.967	0.970	0.921	0.856	0.738
04-Aug	0.849	0.934	0.912	0.925	0.956	0.996	0.838	0.909	0.812	0.947	0.804	0.954	0.985	0.978	0.955	0.923	0.836

-Continued-

Table 31. (p. 2 of 2)

	Cumulative Proportion																
Date	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
05-Aug	0.865	0.953	0.918	0.943	0.966	0.999	0.870	0.931	0.850	0.964	0.870	0.961	0.992	0.985	0.970	0.968	0.877
06-Aug	0.883	0.962	0.924	0.956	0.978	1.000	0.887	0.951	0.883	0.976	0.911	0.967	0.996	0.991	0.979	0.987	0.904
07-Aug	0.897	0.969	0.931	0.962	0.991		0.895	0.969	0.912	0.984	0.951	0.971	1.000	0.995	0.986	1.000	0.925
08-Aug	0.905	0.978	0.936	0.969	1.000		0.901	0.982	0.924	0.990	0.971	0.979		0.997	0.990		0.937
09-Aug	0.913	0.984	0.937	0.975			0.921	0.990	0.938	0.994	0.985	0.990		0.998	0.995		0.951
10-Aug	0.918	0.989	0.938	0.982			0.950	0.995	0.943	0.997	0.995	0.997		1.000	1.000		0.974
11-Aug	0.924	0.991	0.943	0.986			0.975	1.000	0.948	0.998	0.999	1.000					0.997
12-Aug	0.929	0.994	0.951	0.988			0.989		0.952	1.000	1.000						1.000
13-Aug	0.930	0.996	0.958	0.991			0.996		0.963								
14-Aug	0.931	0.997	0.966	0.992			1.000		0.974								
15-Aug	0.935	0.998	0.971	0.994					0.989								
16-Aug	0.942	0.998	0.978	0.994					0.994								
17-Aug	0.949	0.999	0.984	0.995					0.997								
18-Aug	0.958	0.999	0.988	0.996					0.998								
19-Aug	0.967	0.999	0.990	0.997					0.999								
20-Aug	0.979	0.999	0.992	0.997					1.000								
21-Aug	0.984	0.999	0.993	0.997													
22-Aug	0.989	1.000	0.993	0.998													
23-Aug	0.992		0.994	0.998													
24-Aug	0.995		0.995	0.998													
25-Aug	0.997		0.996	0.999													
26-Aug	0.999		0.996	0.999													
27-Aug	1.000		0.997	0.999													
28-Aug	1.000		0.998	0.999													
29-Aug			0.998	0.999													
30-Aug			0.999	1.000													
31-Aug			0.999														
01-Sep			0.999														
02-Sep			0.999														
03-Sep			1.000														
Midpoint	27-Jul	30-Jul	21-Jul	27-Jul	28-Jul	27-Jul	27-Jul	29-Jul	27-Jul	28-Jul	30-Jul	27-Jul	22-Jul	25-Jul	26-Jul	28-Jul	29-Jul
No. days for 80%[a]	20	12	16	14	9	8+	20	11	21	12	17	11	16	12	16	13	19

[a] Inclusive dates: date proportion of escapement reached 10% through date proportion of escapement reached 90%.

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Table 32. Yentna River adjusted sonar counts and secondary counter counts for the south bank 1997.

Date	Upstream counter	Downstream counter	Final count
6-Jul	288		288
7-Jul	200		282
8-Jul	217		306
9-Jul	263		370
10-Jul	267		376
11-Jul	89		126
12-Jul	216		304
13-Jul	1,441		2,029
14-Jul	6,027		8,486
15-Jul	9,478	5,381	9,478
16-Jul	4,423	6,780	6,780
17-Jul	4,611	3,696	4,611
18-Jul	3,678	2,702	3,678
19-Jul	3,733	3,166	3,733
20-Jul	5,345	5,926	5,926
21-Jul	6,936	8,558	8,558
22-Jul	10,276	11,369	11,369
23-Jul	8,969	9,916	9,916
24-Jul	7,936	6,460	7,936
25-Jul	9,913	7,469	9,913
26-Jul	10,069	7,733	10,069
27-Jul	6,221	4,906	6,221
28-Jul	5,312	4,776	5,312
29-Jul	5,724	2,740	5,724
30-Jul	5,627	4,091	5,627
31-Jul	5,957	3,676	5,957
1-Aug	6,776	3,947	6,776
2-Aug	5,272	4,201	5,272
3-Aug	4,920	3,908	4,920
4-Aug	5,540	2,989	5,540
5-Aug	4,329	2,791	4,329
6-Aug	3,197	1,957	3,197
7-Aug	1,911	810	1,911
8-Aug	2,565	1,445	2,565
9-Aug	2,603	2,056	2,603
10-Aug	3,678	2,845	3,678
11-Aug	1,908	1,763	1,908
12-Aug	973	949	973
	166,888		177,047

fn:97adj2.xls

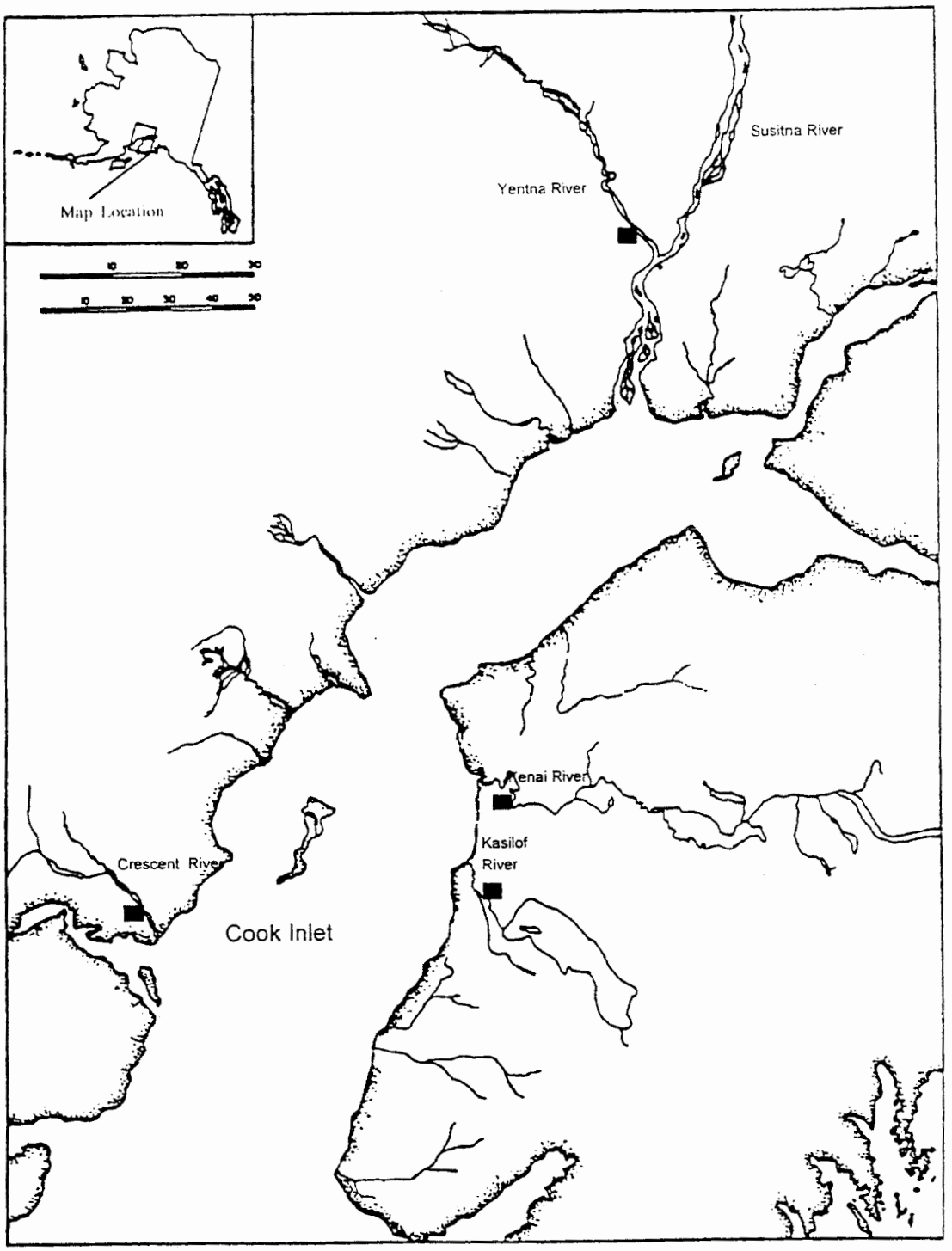
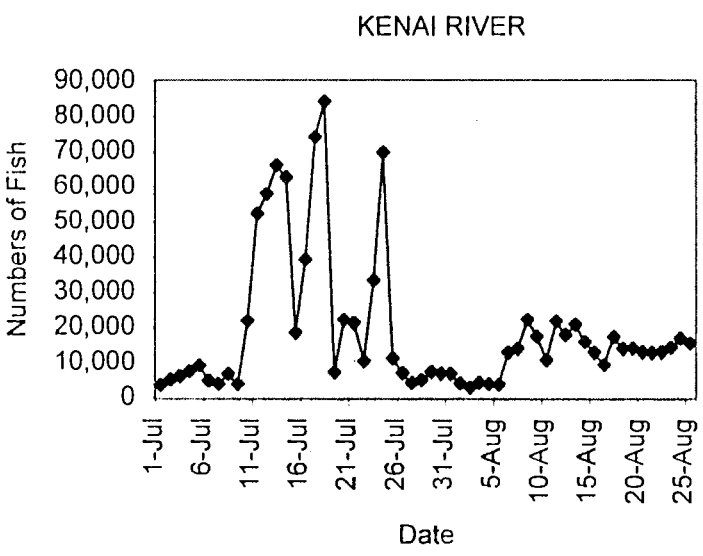
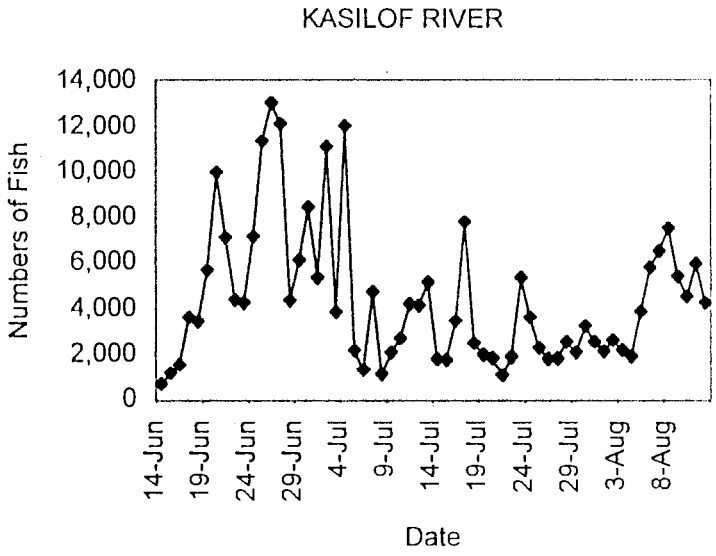
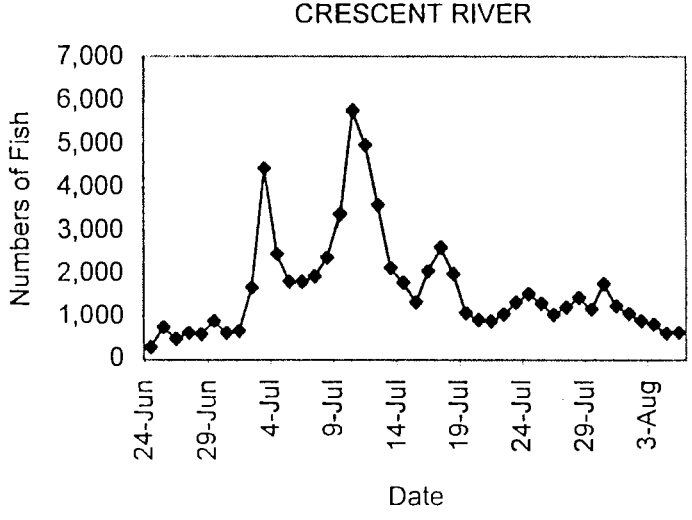


Figure 1. Upper Cook Inlet, Alaska, and sites where salmon escapement was monitored with side-scanning sonar.







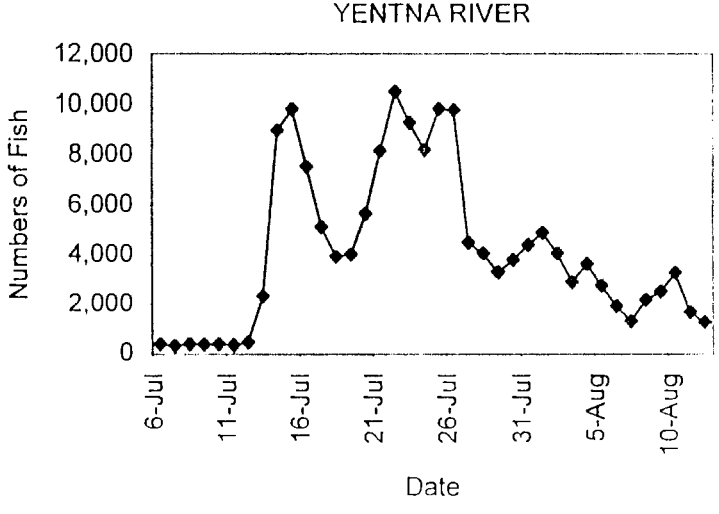


Figure 2. Daily escapement of sockeye salmon into the Kenai, Kasilof, Crescent and Yentna Rivers, 1997. fn: 97ESCALL.xls

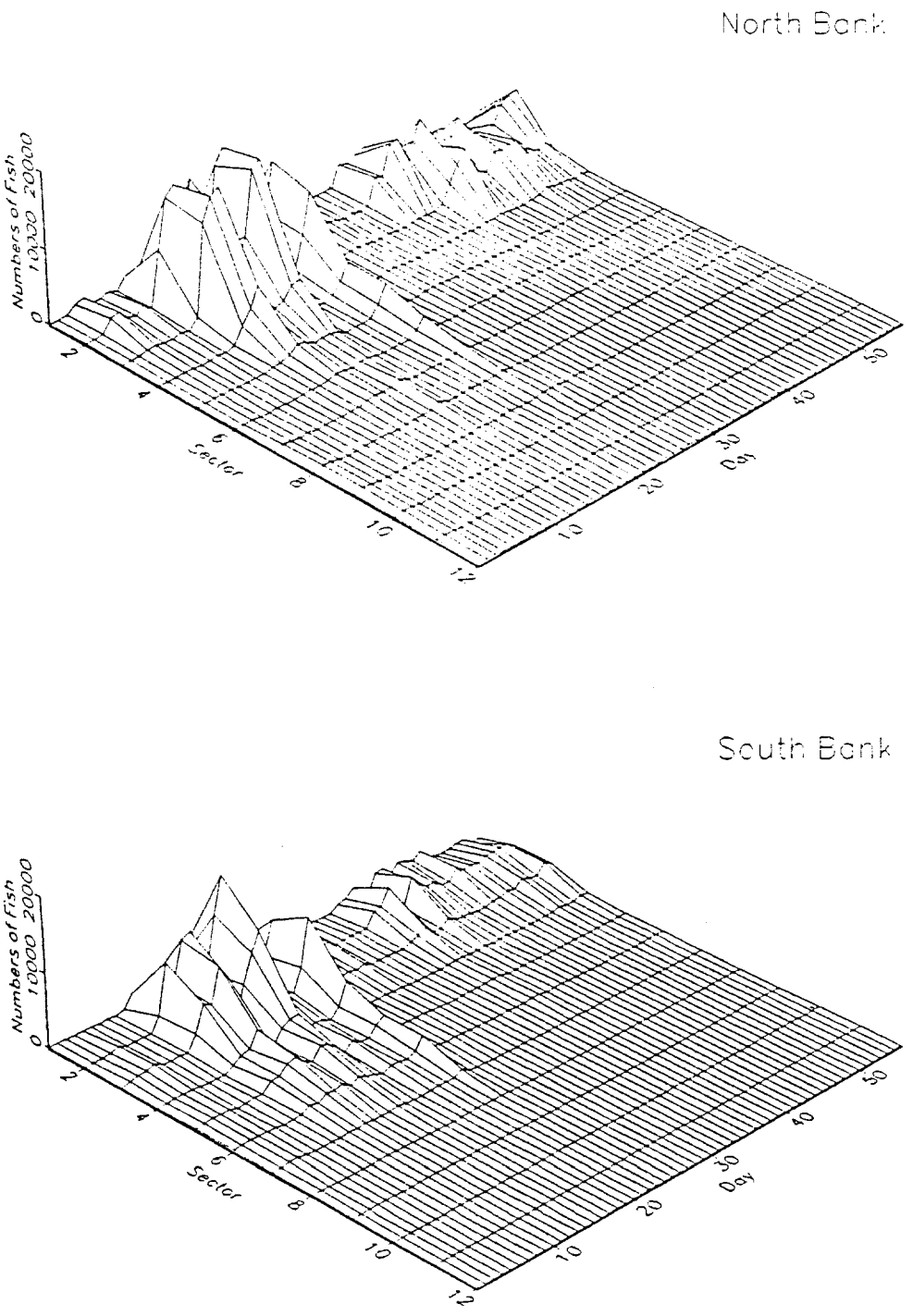


Figure 3. Distribution of salmon sonar counts by sector in the Kenai River, 1997.

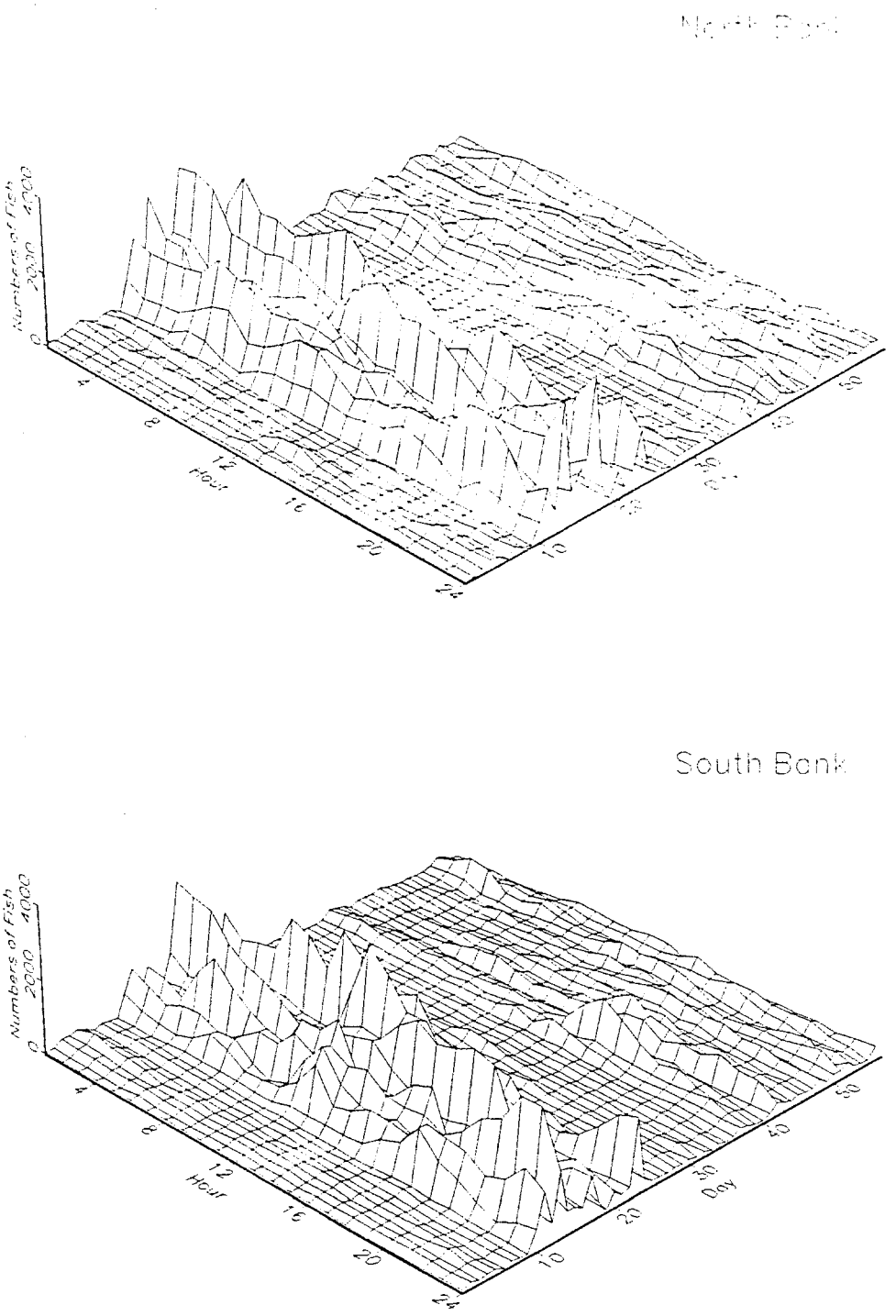


Figure 4. Hourly distribution of salmon migrating past the Kenai River sonar counters, 1997.

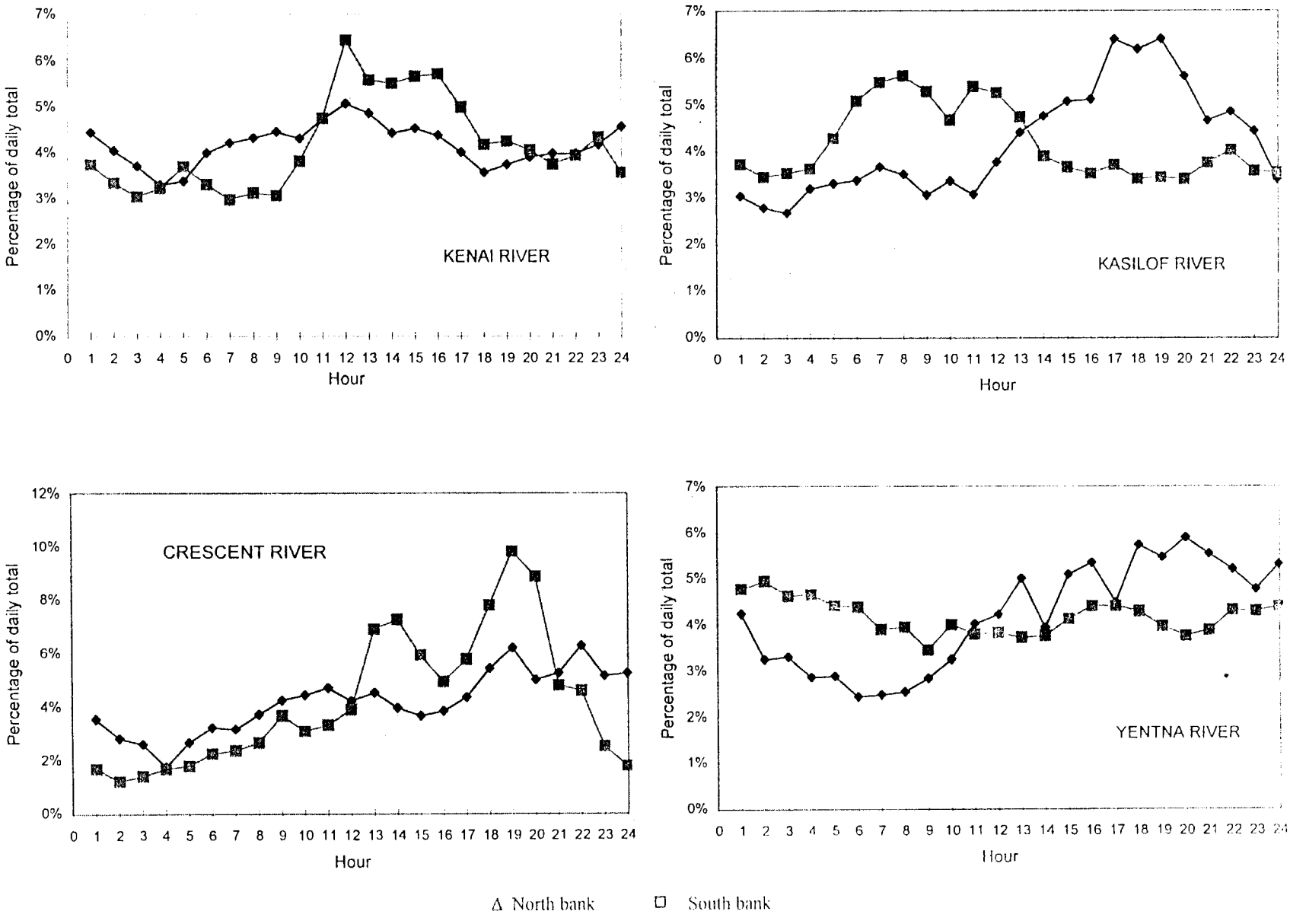


Figure 5. Mean hourly passage rates of salmon migrating past the Kenai, Kasilof, Crescent and Yentna River sonar counters, 1997.

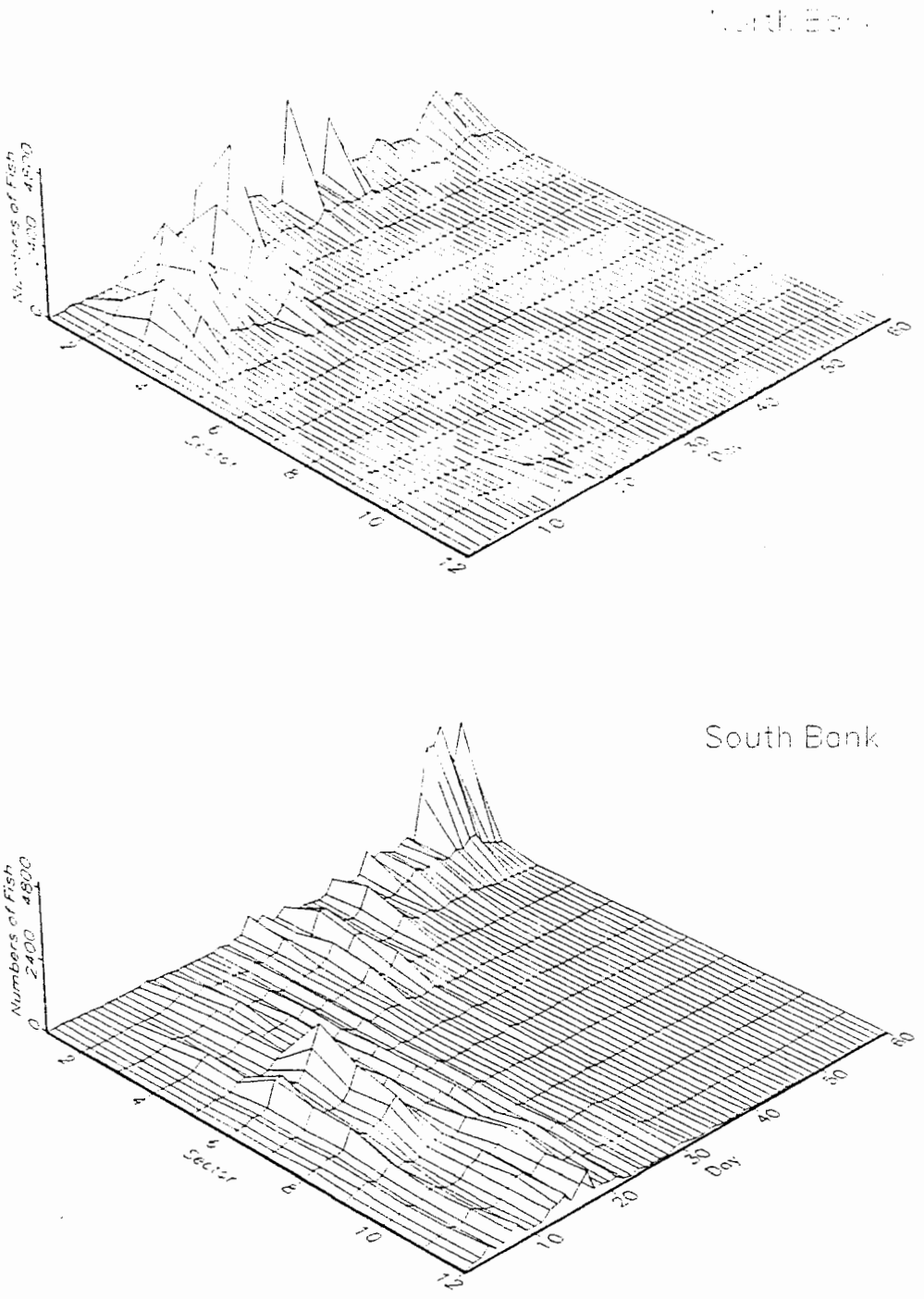


Figure 6. Distribution of salmon sonar counts by sector in the Kasilof River, 1997.

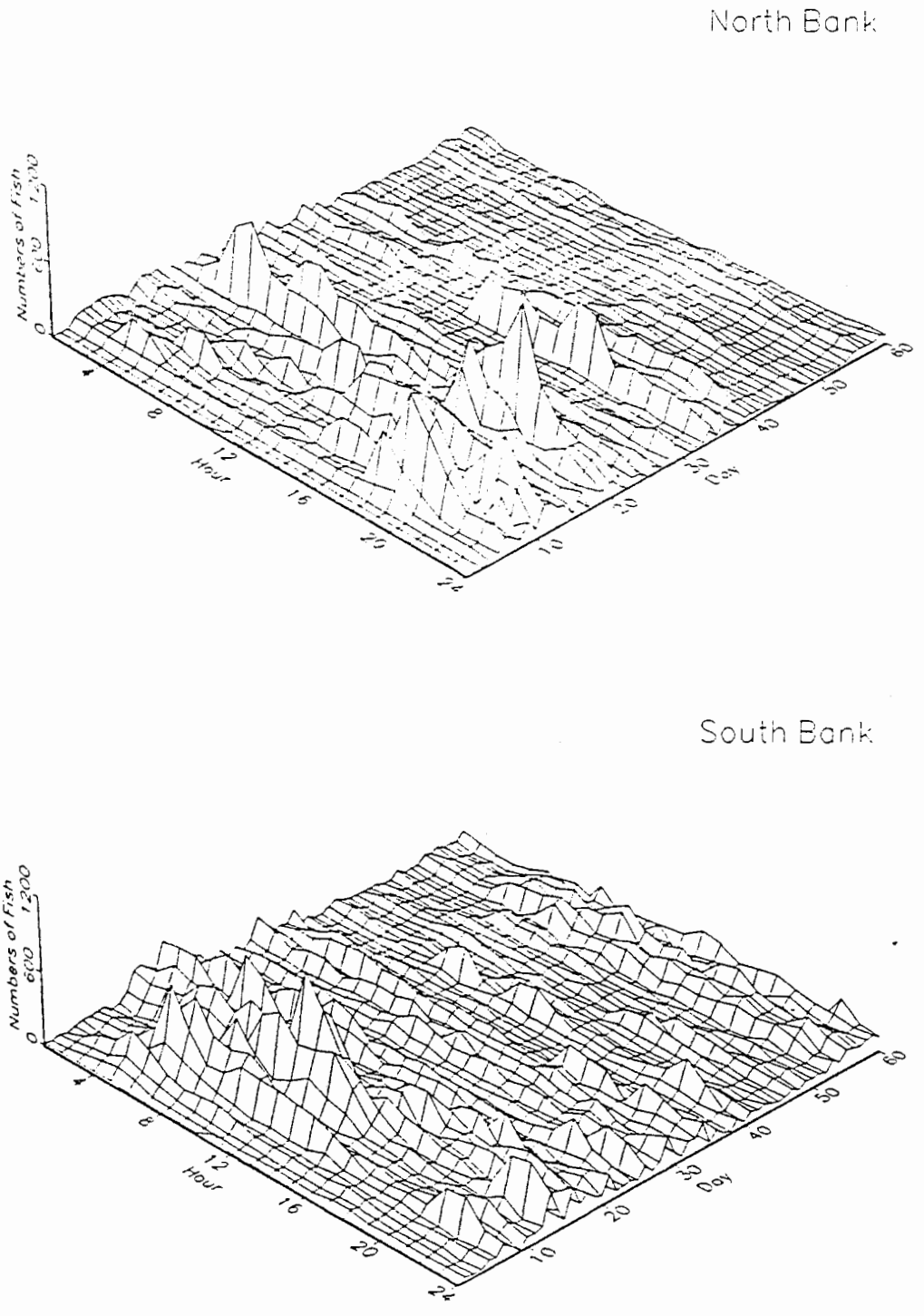


Figure 7. Hourly distribution of salmon migrating past the Kasilof River sonar counters, 1997.

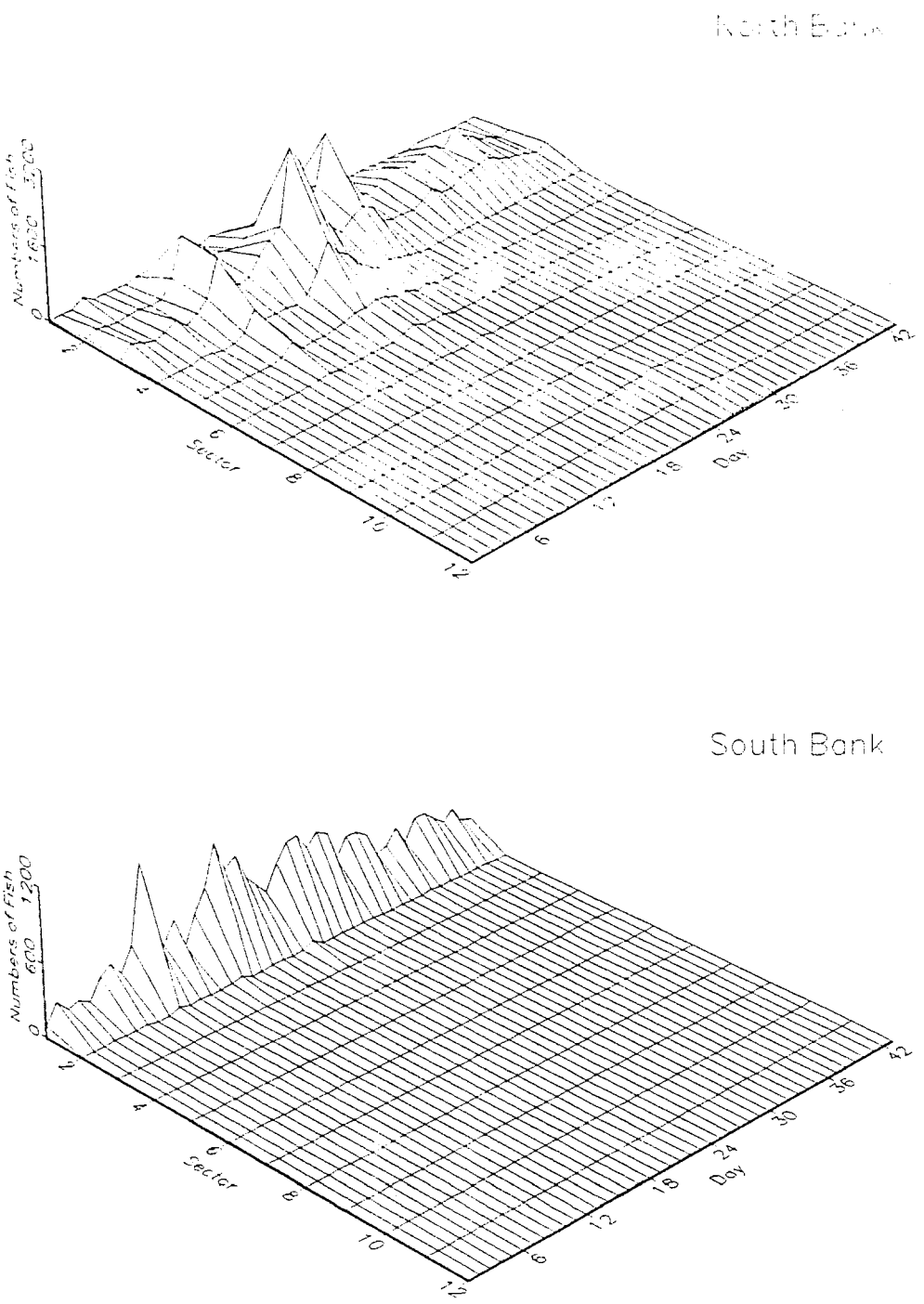


Figure 8. Distribution of salmon sonar counts by sector in the Crescent River, 1997.

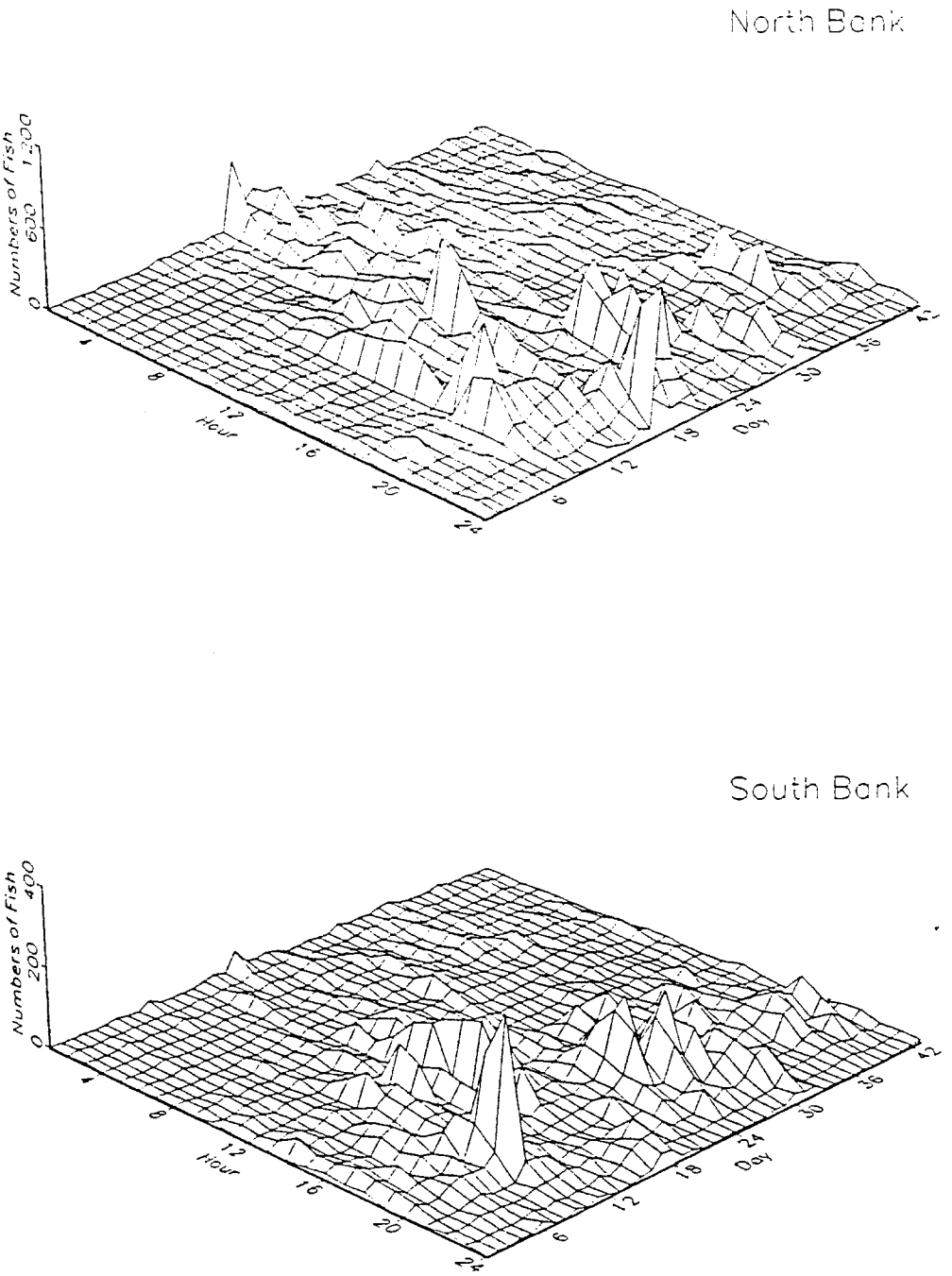


Figure 9. Hourly distribution of salmon migrating past the Crescent River sonar counters, 1997.

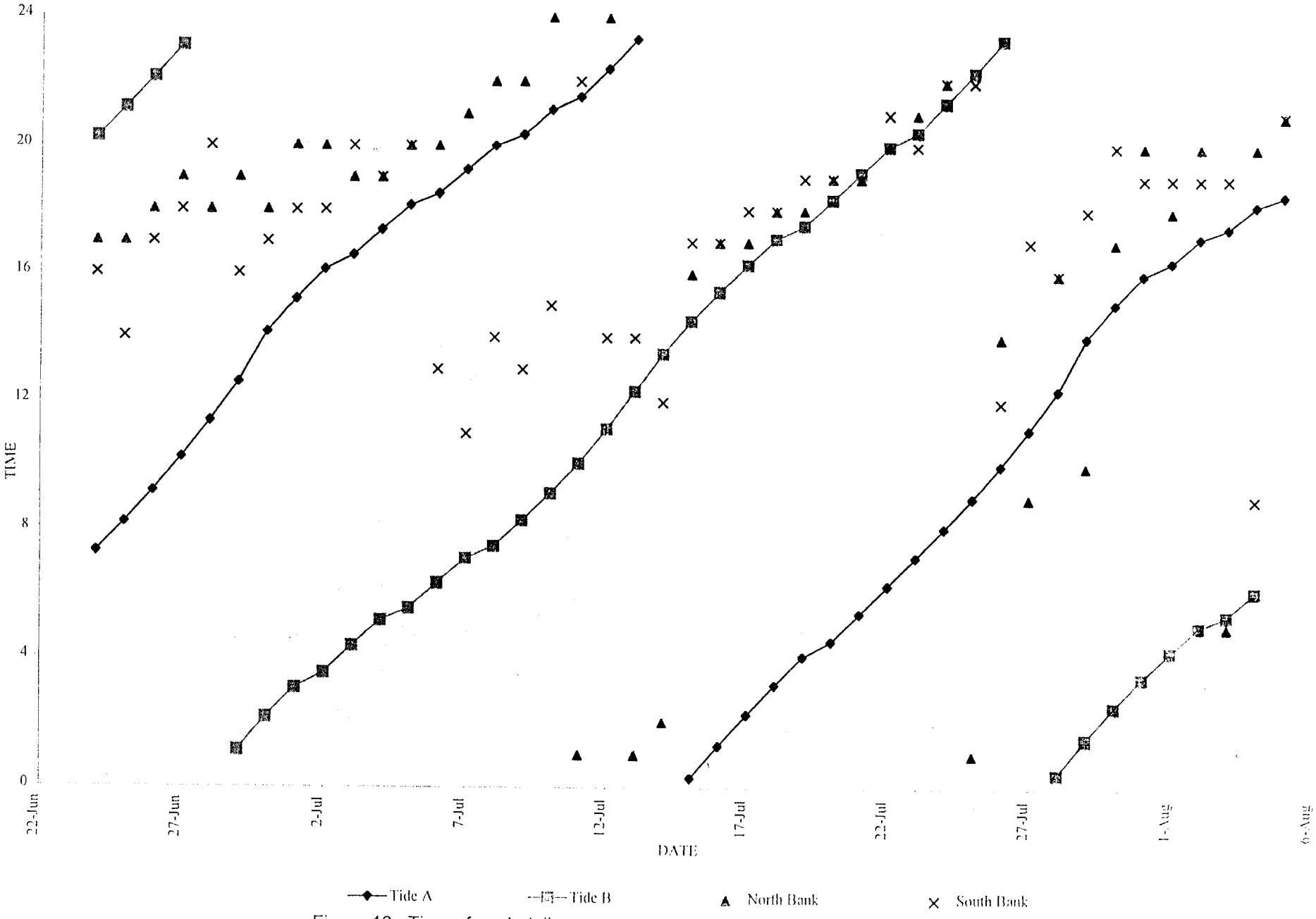


Figure 10. Time of peak daily sonar count and daily high tides at Crescent River 1997

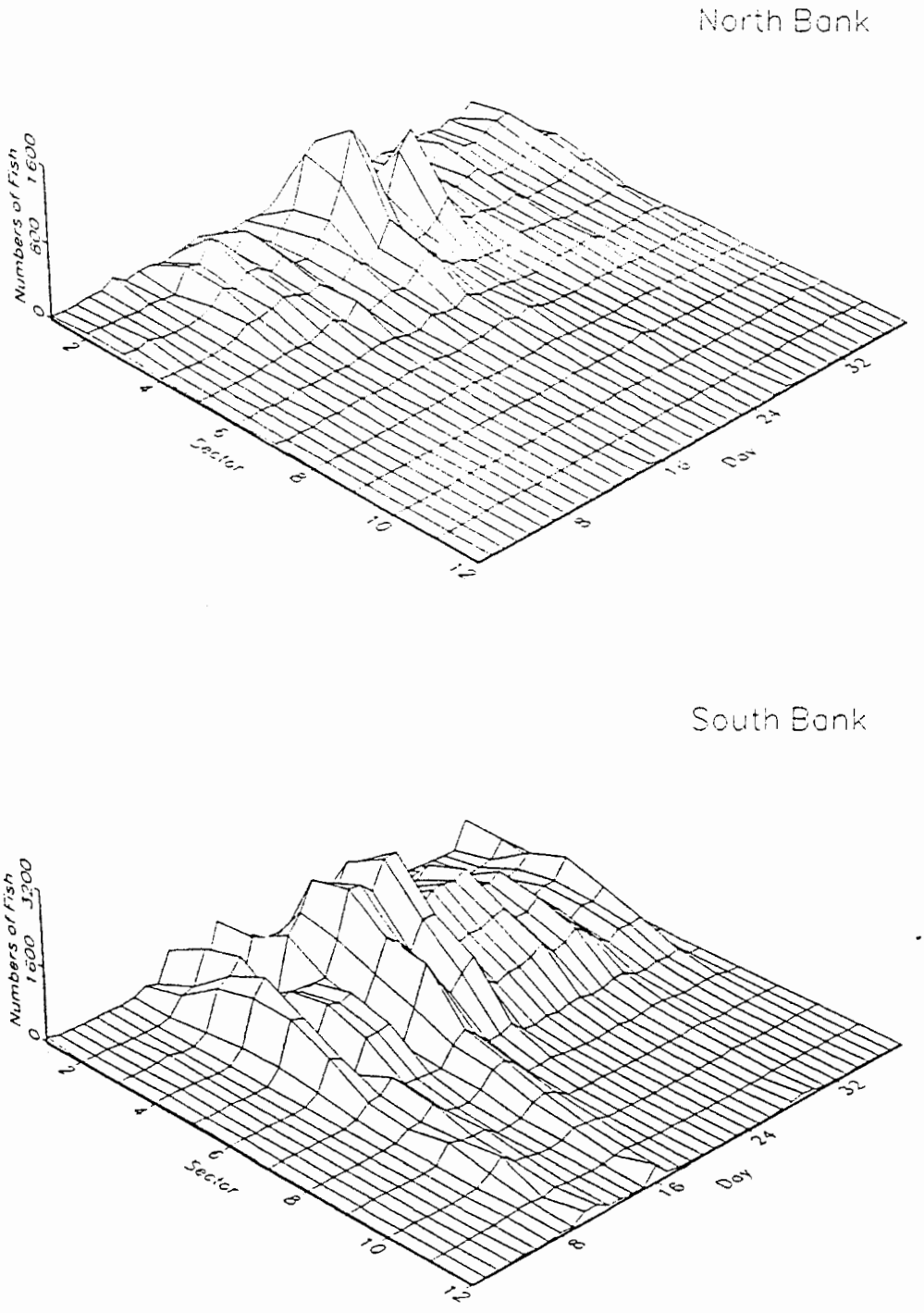


Figure 11. Distribution of salmon sonar counts by sector in the Yentna River, 1997.

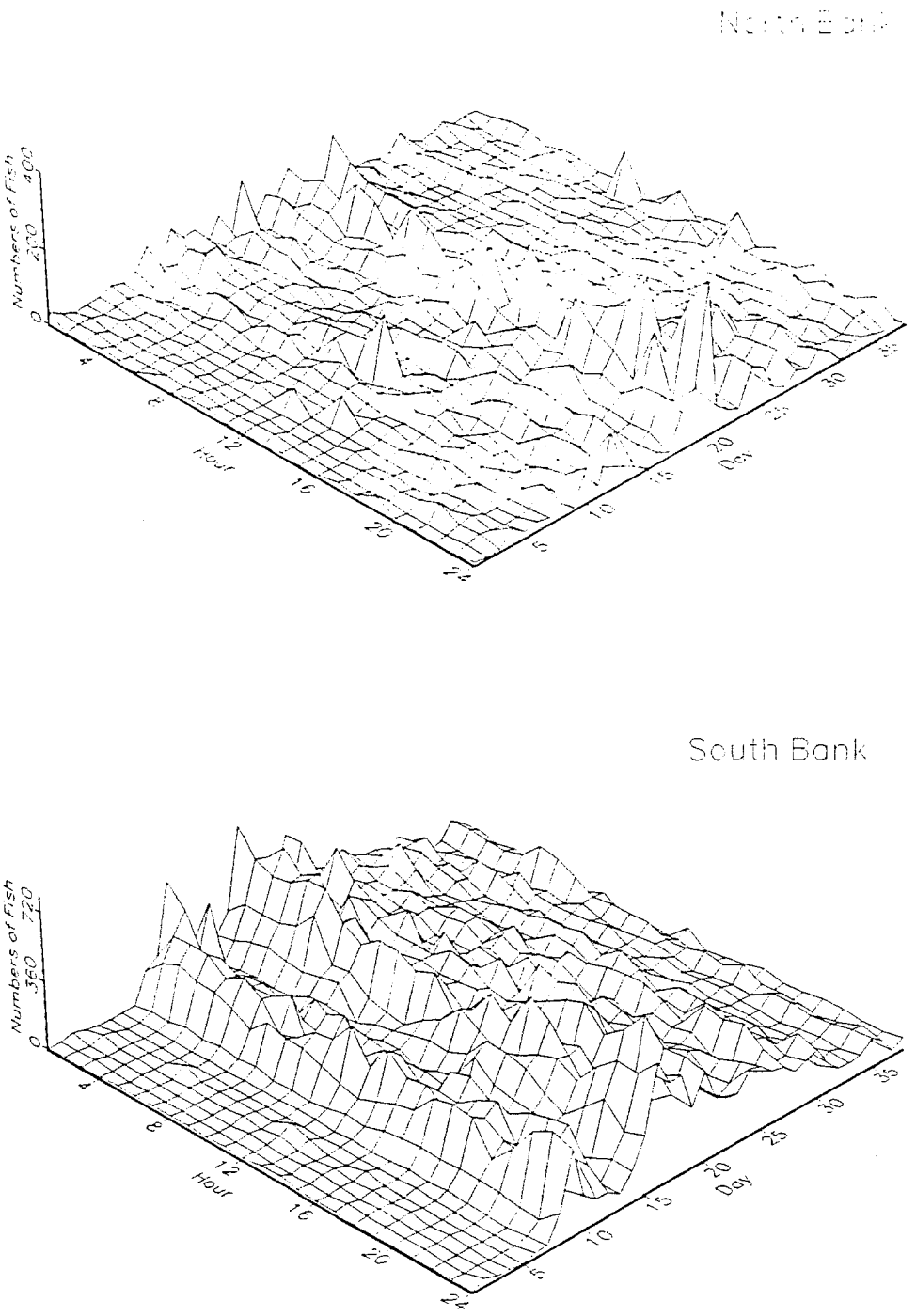


Figure 12. Hourly distribution of salmon migrating past the Yentna River sonar counters, 1997.

Appendix A.1. Estimated salmon escapement adjacent to the north bank of the Kenai River, 1 July through 25 August 1997. Species composition of daily sonar counts based on fish wheel catches.[a]

	Sockeye		Pink		Coho		Chinook	
Date	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
1-Jul	2,177	2,177	0	0	0	0	0	0
2-Jul	3,214	5,391	0	0	0	0	0	0
3-Jul	3,216	8,607	0	0	0	0	0	0
4-Jul	4,712	13,319	0	0	0	0	0	0
5-Jul	5,436	18,755	0	0	0	0	0	0
6-Jul	2,655	21,410	0	0	0	0	0	0
7-Jul	2,443	23,853	0	0	0	0	0	0
8-Jul	4,198	28,051	0	0	0	0	0	0
9-Jul	1,988	30,039	0	0	0	0	0	0
10-Jul	12,726	42,765	0	0	0	0	0	0
11-Jul	31,099	73,864	0	0	0	0	0	0
12-Jul	38,383	112,247	0	0	0	0	0	0
13-Jul	34,196	146,443	0	0	0	0	0	0
14-Jul	33,040	179,483	0	0	0	0	0	0
15-Jul	10,160	189,643	0	0	0	0	0	0
16-Jul	19,496	209,139	0	0	0	0	0	0
17-Jul	41,478	250,617	0	0	0	0	0	0
18-Jul	43,342	293,959	0	0	0	0	0	0
19-Jul	2,982	296,941	0	0	0	0	0	0
20-Jul	11,539	308,480	0	0	0	0	0	0
21-Jul	13,514	321,994	0	0	0	0	0	0
22-Jul	5,254	327,248	0	0	0	0	0	0
23-Jul	19,098	346,346	0	0	0	0	0	0
24-Jul	37,868	384,214	0	0	0	0	0	0
25-Jul	4,996	389,210	0	0	0	0	0	0
26-Jul	3,358	392,568	0	0	0	0	0	0
27-Jul	1,862	394,430	0	0	0	0	0	0
28-Jul	2,387	396,817	0	0	0	0	0	0
29-Jul	3,870	400,687	0	0	0	0	0	0
30-Jul	4,282	404,969	0	0	0	0	0	0
31-Jul	3,180	408,149	0	0	0	0	0	0
1-Aug	2,411	410,560	0	0	0	0	0	0
2-Aug	1,294	411,854	0	0	0	0	0	0
3-Aug	2,401	414,255	0	0	0	0	0	0
4-Aug	1,820	416,075	0	0	0	0	0	0
5-Aug	1,957	418,032	0	0	0	0	0	0
6-Aug	7,804	425,836	0	0	0	0	0	0
7-Aug	7,688	433,524	0	0	0	0	0	0

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Appendix A.1. (p2 of2)

	Sockeye		Pink		Coho		Chinook	
Date	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
8-Aug	12,236	445,760	0	0	0	0	0	0
9-Aug	12,309	458,069	0	0	0	0	0	0
10-Aug	8,187	466,256	0	0	0	0	0	0
11-Aug	11,547	477,803	0	0	0	0	0	0
12-Aug	12,413	490,216	0	0	0	0	0	0
13-Aug	13,467	503,683	40	40	1,126	1,126	0	0
14-Aug	9,626	513,309	0	40	730	1,856	0	0
15-Aug	8,389	521,698	0	40	1,187	3,043	78	78
16-Aug	5,374	527,072	0	40	879	3,922	0	78
17-Aug	10,471	537,543	0	40	1,164	5,086	0	78
18-Aug	9,204	546,747	44	84	773	5,859	44	122
19-Aug	8,642	555,389	0	84	874	6,733	0	122
20-Aug	8,127	563,516	0	84	606	7,339	0	122
21-Aug	5,361	568,877	0	84	154	7,493	12	134
22-Aug	6,167	575,044	0	84	194	7,687	0	134
23-Aug	7,603	582,647	22	106	207	7,894	0	134
24-Aug	9,256	591,903	47	153	256	8,150	47	181
25-Aug	8,987	600,890	0	153	194	8,344	6	187

[a]Species apportionment began on 13 August.

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Appendix A.2. Estimated salmon escapement adjacent to the south bank of the Kenai River, 1 July through 25 August 1997. Species composition of daily sonar counts based on fish wheel catches.[a]

	Sockeye		Pink		Coho		Chinook	
Date	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
1-Jul	1,274	1,274	0	0	0	0	0	0
2-Jul	1,849	3,123	0	0	0	0	0	0
3-Jul	2,835	5,958	0	0	0	0	0	0
4-Jul	2,831	8,789	0	0	0	0	0	0
5-Jul	3,726	12,515	0	0	0	0	0	0
6-Jul	2,109	14,624	0	0	0	0	0	0
7-Jul	1,407	16,031	0	0	0	0	0	0
8-Jul	2,482	18,513	0	0	0	0	0	0
9-Jul	1,780	20,293	0	0	0	0	0	0
10-Jul	9,095	29,388	0	0	0	0	0	0
11-Jul	21,245	50,633	0	0	0	0	0	0
12-Jul	19,547	70,180	0	0	0	0	0	0
13-Jul	31,823	102,003	0	0	0	0	0	0
14-Jul	29,542	131,545	0	0	0	0	0	0
15-Jul	8,349	139,894	0	0	0	0	0	0
16-Jul	19,618	159,512	0	0	0	0	0	0
17-Jul	32,516	192,028	0	0	0	0	0	0
18-Jul	40,768	232,796	0	0	0	0	0	0
19-Jul	4,220	237,016	0	0	0	0	0	0
20-Jul	10,526	247,542	0	0	0	0	0	0
21-Jul	7,746	255,288	0	0	0	0	0	0
22-Jul	5,250	260,538	0	0	0	0	0	0
23-Jul	14,092	274,630	0	0	0	0	0	0
24-Jul	31,686	306,316	0	0	0	0	0	0
25-Jul	6,297	312,613	0	0	0	0	0	0
26-Jul	3,640	316,253	0	0	0	0	0	0
27-Jul	2,283	318,536	0	0	0	0	0	0
28-Jul	2,616	321,152	0	0	0	0	0	0
29-Jul	3,465	324,617	0	0	0	0	0	0
30-Jul	2,653	327,270	0	0	0	0	0	0
31-Jul	3,662	330,932	0	0	0	0	0	0
1-Aug	1,666	332,598	0	0	0	0	0	0
2-Aug	1,540	334,138	0	0	0	0	0	0
3-Aug	1,838	335,976	0	0	0	0	0	0
4-Aug	2,039	338,015	0	0	0	0	0	0
5-Aug	1,676	339,691	0	0	0	0	0	0
6-Aug	5,031	344,722	0	0	0	0	0	0
7-Aug	6,282	351,004	0	0	0	0	0	0

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Appendix A.2. (p2 of2)

	Sockeye		Pink		Coho		Chinook	
Date	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
8-Aug	9,936	360,940	0	0	0	0	0	0
9-Aug	5,175	366,115	0	0	0	0	0	0
10-Aug	2,672	368,787	0	0	0	0	0	0
11-Aug	10,181	378,968	0	0	0	0	0	0
12-Aug	5,541	384,509	0	0	0	0	0	0
13-Aug	7,293	391,802	21	21	610	610	0	0
14-Aug	6,256	398,058	0	21	475	1,085	0	0
15-Aug	4,604	402,662	0	21	651	1,736	43	43
16-Aug	4,080	406,742	0	21	667	2,403	0	43
17-Aug	6,794	413,536	0	21	755	3,158	0	43
18-Aug	4,745	418,281	23	44	398	3,556	23	66
19-Aug	5,380	423,661	0	44	544	4,100	0	66
20-Aug	4,952	428,613	0	44	370	4,470	0	66
21-Aug	7,551	436,164	0	44	216	4,686	17	83
22-Aug	6,910	443,074	0	44	217	4,903	0	83
23-Aug	6,694	449,768	19	63	182	5,085	0	83
24-Aug	7,616	457,384	39	102	211	5,296	38	121
25-Aug	6,544	463,928	0	102	141	5,437	5	126

[a]Species apportionment began on 13 August.

FN:97KE2C.xl

Appendix A.3. Kenai River north bank sonar counts by hour, 1 July through 25 August 1997.

	Counts by Hour																								
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total	Cum Total
01-Jul	146	95	118	91	131	129	87	115	98	78	89	111	104	67	105	117	81	53	54	48	57	57	78	72	2,181	2,181
02-Jul	48	132	132	132	132	132	132	68	91	139	115	240	219	249	167	165	179	129	135	156	117	103	46	43	3,201	5,382
03-Jul	132	132	132	132	132	132	132	185	150	150	154	170	136	140	79	132	132	96	170	92	92	106	158	132	3,198	8,580
04-Jul	197	207	191	124	142	127	115	138	121	194	220	163	391	466	197	172	102	130	132	151	324	214	226	269	4,713	13,293
05-Jul	325	263	216	261	331	294	381	355	274	229	209	166	192	272	227	207	139	137	85	134	193	201	142	205	5,438	18,731
06-Jul	197	283	173	149	199	108	153	99	125	47	51	81	96	106	83	49	52	135	130	84	66	68	66	52	2,652	21,383
07-Jul	93	121	122	83	105	76	58	59	65	68	83	61	82	70	146	138	109	82	85	86	85	161	148	255	2,441	23,824
08-Jul	192	321	355	347	245	299	181	101	138	192	148	60	82	71	113	194	300	213	65	74	101	190	111	103	4,196	28,020
09-Jul	163	131	113	158	107	117	129	44	41	32	51	55	59	76	93	59	98	86	97	48	84	61	40	47	1,989	30,009
10-Jul	40	113	162	231	520	496	232	152	459	642	668	778	646	586	713	803	1,143	995	715	312	759	585	446	528	12,724	42,733
11-Jul	813	545	618	653	984	1,325	1,484	848	1,005	1,336	1,729	1,684	1,292	932	1,178	1,215	1,514	1,490	1,578	2,379	2,441	1,801	934	1,321	31,099	73,832
12-Jul	1,845	1,690	1,718	1,773	1,915	2,501	2,270	2,139	1,809	1,935	1,481	1,633	1,555	1,559	936	1,216	1,283	1,269	1,695	1,718	1,550	1,269	1,008	616	38,383	112,215
13-Jul	485	471	346	620	736	938	1,110	1,536	1,896	1,781	1,804	1,722	1,200	1,421	1,677	1,467	1,187	894	1,420	1,926	1,997	2,024	2,163	3,375	34,196	146,411
14-Jul	2,781	1,887	1,899	772	671	1,730	1,976	1,800	2,038	2,298	2,163	1,741	1,393	739	1,066	696	845	1,225	881	1,072	801	914	763	886	33,040	179,451
15-Jul	784	474	155	185	211	226	163	157	141	62	81	264	418	456	462	742	652	336	607	530	470	609	728	1,247	10,160	189,611
16-Jul	1,303	878	573	358	422	759	796	743	514	871	1,502	1,310	1,036	1,145	875	803	531	402	513	244	553	757	1,109	1,499	19,496	209,107
17-Jul	1,535	1,561	1,077	580	607	625	852	653	1,107	1,442	2,081	2,836	3,112	2,450	2,565	2,432	1,987	1,589	1,079	1,728	1,832	1,451	2,740	3,557	41,478	250,585
18-Jul	3,172	3,273	3,075	2,133	2,089	2,060	2,218	2,149	1,869	1,703	2,355	2,504	2,724	2,073	1,948	1,932	1,515	779	1,295	702	325	359	549	541	43,342	293,927
19-Jul	355	265	208	159	112	85	81	97	98	67	28	52	46	106	129	118	64	95	157	129	121	156	121	127	2,976	296,903
20-Jul	94	170	162	173	89	119	471	719	693	594	648	1,048	480	263	376	308	364	276	584	575	866	956	792	722	11,542	308,445
21-Jul	1,307	856	941	443	614	808	910	794	904	771	508	1,006	901	688	355	241	182	210	134	155	186	203	190	203	13,510	321,955
22-Jul	162	268	278	228	265	147	153	221	339	245	179	137	287	255	232	189	90	53	61	122	168	246	424	509	5,258	327,213
23-Jul	387	437	459	396	307	359	252	403	497	429	655	734	795	994	1,250	886	717	500	778	1,150	1,561	1,617	2,063	1,473	19,099	346,312
24-Jul	1,578	2,553	1,845	1,886	1,681	1,958	2,297	2,615	2,037	1,335	1,936	1,942	1,521	1,484	1,531	2,034	1,744	1,265	850	1,066	968	632	645	468	37,871	384,183
25-Jul	494	178	90	174	238	354	328	356	378	331	207	164	255	218	84	36	48	135	214	137	145	191	82	158	4,995	389,178
26-Jul	194	186	142	124	182	144	357	284	206	148	131	79	78	64	111	113	166	73	105	79	82	87	101	128	3,364	392,542
27-Jul	68	98	99	66	69	86	154	177	154	64	77	91	121	25	66	93	28	18	26	79	62	39	47	55	1,862	394,404
28-Jul	41	75	79	85	41	39	92	137	117	90	64	40	62	135	104	57	98	85	53	69	129	169	282	244	2,387	396,791
29-Jul	129	107	121	167	123	146	205	162	270	196	229	172	57	94	80	71	138	62	67	147	196	349	330	250	3,868	400,659
30-Jul	270	170	168	260	267	286	210	115	192	198	171	130	187	116	71	108	95	126	160	111	195	186	211	275	4,278	404,937

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Appendix A.3. (p.2 of 2)

	Counts by Hour																								
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total	Cum Total
31-Jul	55	52	66	56	40	75	75	76	120	201	144	184	321	187	139	139	149	177	110	122	124	162	137	269	3,180	408,117
01-Aug	75	143	117	79	157	64	59	50	50	89	94	120	116	89	76	48	55	95	47	62	42	101	193	389	2,410	410,527
02-Aug	129	131	121	109	64	63	61	51	54	39	34	59	91	29	33	31	23	16	17	23	15	31	25	45	1,294	411,821
03-Aug	142	104	130	88	75	97	46	63	64	61	142	107	200	124	95	87	86	82	69	104	123	106	104	103	2,402	414,223
04-Aug	222	160	208	96	60	91	63	61	70	64	44	42	108	106	119	26	21	12	31	20	18	45	62	72	1,821	416,044
05-Aug	164	174	123	112	81	49	66	25	36	48	59	20	48	61	93	58	78	40	41	67	100	119	107	188	1,957	418,001
06-Aug	178	186	259	375	218	136	51	73	148	131	245	334	391	559	648	490	371	197	324	260	371	428	675	755	7,803	425,804
07-Aug	562	258	474	482	507	361	219	146	215	207	399	372	260	546	655	636	274	66	83	82	87	224	424	150	7,689	433,493
08-Aug	510	594	476	647	806	698	404	449	523	594	396	395	549	509	163	296	871	529	557	525	316	376	545	508	12,236	445,729
09-Aug	447	500	631	986	836	855	598	639	724	693	441	287	149	358	650	644	503	631	820	261	141	76	150	288	12,308	458,037
10-Aug	151	175	242	279	324	388	377	286	319	175	178	222	319	551	547	632	502	601	481	344	231	333	344	185	8,186	466,223
11-Aug	163	343	445	527	751	304	284	772	444	486	565	634	681	318	330	141	377	794	423	471	597	721	576	399	11,546	477,769
12-Aug	220	127	133	218	147	427	279	354	529	487	605	712	963	953	1,115	1,261	1,191	1,073	1,064	783	461	756	503	268	14,629	492,398
13-Aug	402	327	348	390	395	419	665	916	858	822	763	696	606	504	573	398	382	327	514	557	551	594	219	187	12,413	504,811
14-Aug	224	177	76	118	131	198	258	344	836	545	474	552	542	477	557	582	621	827	584	467	654	629	326	157	10,356	515,167
15-Aug	258	188	177	157	230	357	279	553	408	476	392	554	558	723	657	714	479	770	558	345	347	239	124	117	9,660	524,827
16-Aug	146	168	127	191	105	184	305	190	254	205	282	316	490	367	342	330	229	289	250	243	267	347	392	234	6,253	531,080
17-Aug	297	267	233	260	265	416	461	387	398	360	382	444	445	416	683	630	634	580	703	771	754	547	638	664	11,635	542,715
18-Aug	509	396	466	393	391	488	527	506	409	414	450	528	418	492	492	421	316	200	130	248	399	422	415	605	10,065	552,780
19-Aug	477	283	293	219	274	217	384	534	675	619	464	498	564	465	308	237	167	106	152	428	565	697	537	353	9,516	562,296
20-Aug	385	319	199	187	161	265	449	552	665	634	593	610	513	356	256	183	163	191	332	365	386	271	335	366	8,736	571,032
21-Aug	258	262	203	96	90	161	243	244	289	199	175	153	176	207	112	71	62	120	326	481	434	398	368	399	5,527	576,559
22-Aug	467	389	333	213	198	240	191	270	310	333	253	234	174	184	258	242	140	98	115	237	404	361	452	364	6,360	582,919
23-Aug	331	261	471	713	515	379	316	329	271	399	271	289	303	454	268	316	277	351	171	164	167	200	270	346	7,832	590,751
24-Aug	341	370	570	685	815	754	622	531	422	158	219	154	307	259	313	317	268	415	450	227	247	358	438	366	9,606	600,357
25-Aug	446	444	378	426	511	619	634	522	510	503	483	460	322	278	188	195	226	163	191	255	410	350	343	330	9,187	609,544
	26,889	24,738	23,066	21,045	21,814	24,910	25,895	26,344	27,427	26,609	28,364	30,150	29,171	26,892	26,689	25,918	24,048	21,688	22,468	23,215	24,740	24,652	25,115	27,367	609,541	

Appendix A.4. Kenai River south bank sonar counts by hour, 1 July through 25 August 1997.

	Counts by Hour																								
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total	Cum Total
01-Jul	49	48	46	57	51	56	59	66	51	50	59	52	60	56	48	64	67	56	43	28	32	43	70	69	1,280	1,280
02-Jul	63	46	32	20	13	74	28	30	31	56	59	91	59	74	49	85	100	129	109	132	143	130	119	175	1,847	3,127
03-Jul	210	179	176	134	135	148	118	101	66	77	138	117	101	124	62	104	124	131	106	118	112	81	88	85	2,835	5,962
04-Jul	183	203	163	109	72	100	81	97	76	75	107	139	150	149	80	111	46	78	99	76	133	237	125	142	2,831	8,793
05-Jul	244	410	270	271	195	76	125	141	67	107	128	123	122	127	143	157	111	103	121	151	143	143	99	148	3,725	12,518
06-Jul	157	174	192	191	89	82	58	59	49	79	78	50	110	94	54	86	67	96	79	74	61	65	16	48	2,108	14,626
07-Jul	37	57	61	59	41	32	29	22	34	76	47	71	38	47	69	93	77	78	63	51	51	76	82	116	1,407	16,033
08-Jul	119	125	190	152	150	115	121	84	70	55	62	89	60	38	93	85	156	178	108	91	90	100	61	89	2,481	18,514
09-Jul	71	108	119	119	96	87	71	48	21	45	86	42	46	43	37	68	101	128	72	103	79	56	74	58	1,778	20,292
10-Jul	55	82	59	119	163	137	140	140	100	113	254	263	287	277	331	716	898	1,550	946	737	434	220	479	595	9,095	29,387
11-Jul	633	414	306	254	433	790	625	302	345	409	793	1,520	663	830	1,111	1,087	992	1,539	1,445	1,368	1,005	1,193	1,762	1,426	21,245	50,632
12-Jul	1,212	968	720	952	988	750	815	402	188	390	1,283	1,904	1,143	863	790	1,006	787	528	437	835	717	768	561	540	19,547	70,179
13-Jul	404	356	257	266	524	477	790	1,152	1,108	1,634	1,339	1,802	1,535	1,697	1,285	1,240	1,292	1,035	1,395	2,008	2,266	3,120	3,119	1,722	31,823	102,002
14-Jul	1,083	1,021	742	1,675	2,292	1,718	1,354	1,134	1,010	1,895	1,875	2,404	1,299	1,208	1,155	1,725	1,917	563	573	585	333	562	829	592	29,544	131,546
15-Jul	432	230	202	202	220	127	116	87	74	168	297	300	481	539	715	519	459	632	428	374	222	275	679	572	8,350	139,896
16-Jul	502	545	421	539	602	490	305	289	334	895	1,606	1,741	1,913	1,386	1,097	844	819	979	1,029	882	782	682	496	440	19,618	159,514
17-Jul	1,172	771	832	887	469	616	309	359	186	417	1,652	1,913	1,834	2,457	2,837	2,478	2,603	2,864	2,695	1,384	847	701	1,099	1,134	32,516	192,030
18-Jul	3,003	2,838	2,685	2,028	1,690	1,541	1,204	851	902	1,046	2,498	3,986	3,427	2,695	2,724	1,993	1,073	903	751	723	797	498	549	363	40,768	232,798
19-Jul	266	221	223	254	246	88	93	86	127	174	134	179	297	329	169	190	138	191	237	164	153	116	81	61	4,217	237,015
20-Jul	104	158	168	189	254	214	224	166	197	177	272	1,175	1,595	796	529	338	247	216	497	890	383	726	595	415	10,525	247,540
21-Jul	333	381	331	385	550	328	300	452	341	337	282	376	457	555	300	317	203	202	220	213	226	241	191	224	7,745	255,285
22-Jul	245	422	334	248	255	159	144	133	79	189	233	236	132	302	147	235	228	156	143	214	241	199	282	294	5,250	260,535
23-Jul	250	217	253	328	310	135	107	148	209	266	368	401	310	721	856	889	731	574	637	556	764	1,231	1,810	2,021	14,092	274,627
24-Jul	1,557	1,034	1,229	1,324	2,368	2,157	1,527	2,779	2,320	2,427	1,781	2,038	1,266	1,105	1,249	1,180	1,131	476	736	481	417	341	455	308	31,686	306,313
25-Jul	318	417	465	434	492	318	296	262	261	202	149	193	196	183	290	324	279	217	283	224	142	133	80	139	6,297	312,610
26-Jul	131	156	174	118	134	121	149	163	221	135	139	192	196	175	211	209	147	123	146	110	122	136	113	119	3,640	316,250
27-Jul	61	78	51	61	58	89	59	85	79	75	201	96	58	109	114	145	101	92	96	110	100	133	119	113	2,283	318,533
28-Jul	101	84	47	44	89	33	106	108	135	177	90	173	63	96	78	90	76	74	89	117	202	236	175	133	2,616	321,149
29-Jul	95	95	91	138	133	140	175	125	207	189	207	120	121	136	166	247	136	133	151	139	115	130	161	114	3,464	324,613
30-Jul	128	97	70	81	99	97	88	79	122	227	194	162	84	131	86	108	94	88	70	75	135	105	76	157	2,653	327,266

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Appendix A.4. (p.2 of 2)

Date	Counts by Hour																							Daily Total	Cum Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
31-Jul	143	149	92	83	135	171	178	110	150	151	193	379	325	187	153	121	125	106	100	91	97	123	210	90	3,662	330,928
01-Aug	66	47	37	34	26	47	48	49	55	54	74	102	131	67	63	70	101	106	100	53	76	55	84	121	1,666	332,594
02-Aug	149	102	67	47	51	68	50	57	75	61	51	74	97	83	51	56	38	45	46	61	43	62	48	58	1,540	334,134
03-Aug	53	64	46	35	34	62	68	81	83	58	46	70	91	53	67	89	68	82	79	116	146	114	114	119	1,838	335,972
04-Aug	63	59	40	56	39	77	116	67	92	124	92	105	167	138	97	90	107	68	84	81	88	84	51	54	2,039	338,011
05-Aug	50	67	66	62	57	46	40	50	66	46	54	63	99	75	118	51	48	40	42	78	141	121	92	104	1,676	339,687
06-Aug	88	142	184	143	127	127	153	145	197	187	220	423	222	565	422	282	233	125	128	167	171	196	184	200	5,031	344,718
07-Aug	296	377	457	322	304	216	213	140	236	167	243	321	354	205	193	355	254	227	203	212	259	359	222	147	6,282	351,000
08-Aug	233	311	226	280	307	251	315	243	283	317	392	356	257	412	993	1,414	1,072	676	381	501	271	161	189	95	9,936	360,936
09-Aug	189	149	127	239	251	194	235	294	220	253	282	225	287	342	329	176	168	156	131	275	277	191	105	80	5,175	366,111
10-Aug	69	62	106	78	109	112	86	91	111	66	68	113	142	85	126	213	130	106	198	97	104	104	134	162	2,672	368,783
11-Aug	176	155	125	126	105	185	325	470	555	389	247	382	375	488	385	684	763	438	646	606	863	673	672	348	10,181	378,964
12-Aug	171	117	106	118	97	96	128	109	156	242	151	167	340	329	794	1,099	771	647	515	422	616	254	229	250	7,924	386,888
13-Aug	162	141	136	169	199	212	136	209	198	137	117	137	264	258	319	391	397	373	377	247	315	254	228	166	5,542	392,430
14-Aug	224	150	67	78	75	181	212	268	308	297	304	277	332	410	426	519	580	327	316	186	215	259	280	240	6,731	399,161
15-Aug	152	136	50	78	61	112	158	189	182	374	241	451	430	417	305	222	224	241	253	219	213	165	247	178	5,298	404,459
16-Aug	129	131	124	83	76	83	121	114	154	198	165	204	244	302	337	387	254	356	227	237	210	208	217	186	4,747	409,206
17-Aug	104	132	132	89	124	219	172	178	257	169	170	276	368	438	611	639	586	492	555	398	438	336	336	330	7,549	416,755
18-Aug	144	104	155	143	117	128	140	236	199	257	155	236	325	471	526	401	208	172	221	206	179	183	120	163	5,189	421,944
19-Aug	123	102	145	131	155	307	197	258	273	206	339	501	407	561	365	185	247	111	109	193	221	274	269	245	5,924	427,868
20-Aug	125	132	72	51	60	94	158	150	187	198	182	147	369	389	331	268	219	147	232	306	297	439	529	240	5,322	433,190
21-Aug	211	272	286	92	127	73	152	235	258	298	415	648	585	666	618	451	127	114	113	244	408	494	0	364	7,251	440,441
22-Aug	333	513	785	710	267	251	444	311	307	292	364	265	315	245	298	225	157	90	66	80	148	199	295	167	7,127	447,568
23-Aug	286	210	374	243	380	320	456	350	220	225	209	171	273	344	425	411	578	393	233	244	111	139	175	125	6,895	454,463
24-Aug	140	232	173	216	318	316	316	373	288	298	339	329	329	468	689	465	463	471	347	369	406	235	223	101	7,904	462,367
25-Aug	118	140	162	123	143	206	274	412	384	345	355	463	461	295	345	239	281	205	247	239	307	234	327	382	6,690	469,057
	17,215	16,131	15,249	15,467	16,955	15,449	14,507	15,139	14,504	17,571	21,879	28,833	25,695	25,635	26,261	26,236	23,399	20,426	19,753	19,141	17,867	18,593	20,025	17,127	469,057	

Appendix A.5. Kenai River north bank sonar counts by hour, 1 July through 25 August 1997. Counts expressed as percentage of daily total.

	Counts by Hour																							
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total
01-Jul	6.7	4.4	5.4	4.2	6.0	5.9	4.0	5.3	4.5	3.6	4.1	5.1	4.8	3.1	4.8	5.4	3.7	2.4	2.5	2.2	2.6	2.6	3.6	3.3	100.2
02-Jul	1.5	4.1	4.1	4.1	4.1	4.1	4.1	2.1	2.8	4.3	3.6	7.5	6.8	7.8	5.2	5.2	5.6	4.0	4.2	4.9	3.7	3.2	1.4	1.3	99.7
03-Jul	4.1	4.1	4.1	4.1	4.1	4.1	4.1	5.8	4.7	4.7	4.8	5.3	4.3	4.4	2.5	4.1	4.1	3.0	5.3	2.9	2.9	3.3	4.9	4.1	99.8
04-Jul	4.2	4.4	4.1	2.6	3.0	2.7	2.4	2.9	2.6	4.1	4.7	3.5	8.3	9.9	4.2	3.6	2.2	2.8	2.8	3.2	6.9	4.5	4.8	5.7	100.1
05-Jul	6.0	4.8	4.0	4.8	6.1	5.4	7.0	6.5	5.0	4.2	3.8	3.1	3.5	5.0	4.2	3.8	2.6	2.5	1.6	2.5	3.5	3.7	2.6	3.8	100.0
06-Jul	7.4	10.7	6.5	5.6	7.5	4.1	5.8	3.7	4.7	1.8	1.9	3.1	3.6	4.0	3.1	1.8	2.0	5.1	4.9	3.2	2.5	2.6	2.5	2.0	100.1
07-Jul	3.8	5.0	5.0	3.4	4.3	3.1	2.4	2.4	2.7	2.8	3.4	2.5	3.4	2.9	6.0	5.7	4.5	3.4	3.5	3.5	3.5	6.6	6.1	10.4	100.3
08-Jul	4.6	7.7	8.5	8.3	5.8	7.1	4.3	2.4	3.3	4.6	3.5	1.4	2.0	1.7	2.7	4.6	7.1	5.1	1.5	1.8	2.4	4.5	2.6	2.5	100.0
09-Jul	8.2	6.6	5.7	7.9	5.4	5.9	6.5	2.2	2.1	1.6	2.6	2.8	3.0	3.8	4.7	3.0	4.9	4.3	4.9	2.4	4.2	3.1	2.0	2.4	100.2
10-Jul	0.3	0.9	1.3	1.8	4.1	3.9	1.8	1.2	3.6	5.0	5.2	6.1	5.1	4.6	5.6	6.3	9.0	7.8	5.6	2.5	6.0	4.6	3.5	4.1	99.9
11-Jul	2.6	1.8	2.0	2.1	3.2	4.3	4.8	2.7	3.2	4.3	5.6	5.4	4.2	3.0	3.8	3.9	4.9	4.8	5.1	7.6	7.8	5.8	3.0	4.2	100.1
12-Jul	4.8	4.4	4.5	4.6	5.0	6.5	5.9	5.6	4.7	5.0	3.9	4.3	4.1	4.1	2.4	3.2	3.3	3.3	4.1	4.5	4.0	3.3	2.6	1.6	100.0
13-Jul	1.4	1.4	1.0	1.8	2.2	2.7	3.2	4.5	5.5	5.2	5.3	5.0	3.5	4.2	4.9	4.3	3.5	2.6	4.2	5.6	5.8	5.9	6.3	9.9	99.9
14-Jul	8.4	5.7	5.7	2.3	2.0	5.2	6.0	5.4	6.2	7.0	6.5	5.3	4.2	2.2	3.2	2.1	2.6	3.7	2.7	3.2	2.4	2.8	2.3	2.7	99.8
15-Jul	7.7	4.7	1.5	1.8	2.1	2.2	1.6	1.5	1.4	0.6	0.8	2.6	4.1	4.5	4.5	7.3	6.4	3.3	6.0	5.2	4.6	6.0	7.2	12.3	99.9
16-Jul	6.7	4.5	2.9	1.8	2.2	3.9	4.1	3.8	2.6	4.5	7.7	6.7	5.3	5.9	4.5	4.1	2.7	2.1	2.6	1.3	2.8	3.9	5.7	7.7	100.0
17-Jul	3.7	3.8	2.6	1.4	1.5	1.5	2.1	1.6	2.7	3.5	5.0	6.8	7.5	5.9	6.2	5.9	4.8	3.8	2.6	4.2	4.4	3.5	6.6	8.6	100.2
18-Jul	7.3	7.6	7.1	4.9	4.8	4.8	5.1	5.0	4.3	3.9	5.4	5.8	6.3	4.8	4.5	4.5	3.5	1.8	3.0	1.6	0.7	0.8	1.3	1.2	100.0
19-Jul	11.9	8.9	7.0	5.3	3.8	2.9	2.7	3.3	3.3	2.3	0.9	1.7	1.5	3.6	4.3	4.0	2.2	3.2	5.3	4.3	4.1	5.2	4.1	4.3	100.1
20-Jul	0.8	1.5	1.4	1.5	0.8	1.0	4.1	6.2	6.0	5.1	5.6	9.1	4.2	2.3	3.3	2.7	3.2	2.4	5.1	5.0	7.5	8.3	6.9	6.3	100.3
21-Jul	9.7	6.3	7.0	3.3	4.5	6.0	6.7	5.9	6.7	5.7	3.8	7.4	6.7	5.1	2.6	1.8	1.3	1.6	1.0	1.1	1.4	1.5	1.4	1.5	100.0
22-Jul	3.1	5.1	5.3	4.3	5.0	2.8	2.9	4.2	6.4	4.7	3.4	2.6	5.5	4.8	4.4	3.6	1.7	1.0	1.2	2.3	3.2	4.7	8.1	9.7	100.0
23-Jul	2.0	2.3	2.4	2.1	1.6	1.9	1.3	2.1	2.6	2.2	3.4	3.8	4.2	5.2	6.5	4.6	3.8	2.6	4.1	6.0	8.2	8.5	10.8	7.7	99.9
24-Jul	4.2	6.7	4.9	5.0	4.4	5.2	6.1	6.9	5.4	3.5	5.1	5.1	4.0	3.9	4.0	5.4	4.6	3.3	2.2	2.8	2.6	1.7	1.7	1.2	99.9
25-Jul	9.9	3.6	1.8	3.5	4.8	7.1	6.6	7.1	7.6	6.6	4.1	3.3	5.1	4.4	1.7	0.7	1.0	2.7	4.3	2.7	2.9	3.8	1.6	3.2	100.1
26-Jul	5.8	5.5	4.2	3.7	5.4	4.3	10.6	8.4	6.1	4.4	3.9	2.3	2.3	1.9	3.3	3.4	4.9	2.2	3.1	2.3	2.4	2.6	3.0	3.8	99.8
27-Jul	3.7	5.3	5.3	3.5	3.7	4.6	8.3	9.5	8.3	3.4	4.1	4.9	6.5	1.3	3.5	5.0	1.5	1.0	1.4	4.2	3.3	2.1	2.5	3.0	99.9
28-Jul	1.7	3.1	3.3	3.6	1.7	1.6	3.9	5.7	4.9	3.8	2.7	1.7	2.6	5.7	4.4	2.4	4.1	3.6	2.2	2.9	5.4	7.1	11.8	10.2	100.1
29-Jul	3.3	2.8	3.1	4.3	3.2	3.8	5.3	4.2	7.0	5.1	5.9	4.4	1.5	2.4	2.1	1.8	3.6	1.6	1.7	3.8	5.1	9.0	8.5	6.5	100.0
30-Jul	6.3	4.0	3.9	6.1	6.2	6.7	4.9	2.7	4.5	4.6	4.0	3.0	4.4	2.7	1.7	2.5	2.2	2.9	3.7	2.6	4.6	4.3	4.9	6.4	99.8

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Appendix A.5. (p.2 of 2)

Date	Counts by Hour																							Daily Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
31-Jul	1.7	1.6	2.1	1.8	1.3	2.4	2.4	2.4	3.8	6.3	4.5	5.8	10.1	5.9	4.4	4.4	4.7	5.6	3.5	3.8	3.9	5.1	4.3	8.5	100.3
01-Aug	3.1	5.9	4.9	3.3	6.5	2.7	2.4	2.1	2.1	3.7	3.9	5.0	4.8	3.7	3.2	2.0	2.3	3.9	2.0	2.6	1.7	4.2	8.0	16.1	100.1
02-Aug	10.0	10.1	9.4	8.4	4.9	4.9	4.7	3.9	4.2	3.0	2.6	4.6	7.0	2.2	2.6	2.4	1.8	1.2	1.3	1.8	1.2	2.4	1.9	3.5	100.0
03-Aug	5.9	4.3	5.4	3.7	3.1	4.0	1.9	2.6	2.7	2.5	5.9	4.5	8.3	5.2	4.0	3.6	3.6	3.4	2.9	4.3	5.1	4.4	4.3	4.3	99.9
04-Aug	12.2	8.8	11.4	5.3	3.3	5.0	3.5	3.3	3.8	3.5	2.4	2.3	5.9	5.8	6.5	1.4	1.2	0.7	1.7	1.1	1.0	2.5	3.4	4.0	100.0
05-Aug	8.4	8.9	6.3	5.7	4.1	2.5	3.4	1.3	1.8	2.5	3.0	1.0	2.5	3.1	4.8	3.0	4.0	2.0	2.1	3.4	5.1	6.1	5.5	9.6	100.1
06-Aug	2.3	2.4	3.3	4.8	2.8	1.7	0.7	0.9	1.9	1.7	3.1	4.3	5.0	7.2	8.3	6.3	4.8	2.5	4.2	3.3	4.8	5.5	8.7	9.7	100.2
07-Aug	7.3	3.4	6.2	6.3	6.6	4.7	2.8	1.9	2.8	2.7	5.2	4.8	3.4	7.1	8.5	8.3	3.6	0.9	1.1	1.1	1.1	2.9	5.5	2.0	100.2
08-Aug	4.2	4.9	3.9	5.3	6.6	5.7	3.3	3.7	4.3	4.9	3.2	3.2	4.5	4.2	1.3	2.4	7.1	4.3	4.6	4.3	2.6	3.1	4.5	4.2	100.3
09-Aug	3.6	4.1	5.1	8.0	6.8	6.9	4.9	5.2	5.9	5.6	3.6	2.3	1.2	2.9	5.3	5.2	4.1	5.1	6.7	2.1	1.1	0.6	1.2	2.3	99.8
10-Aug	1.8	2.1	3.0	3.4	4.0	4.7	4.6	3.5	3.9	2.1	2.2	2.7	3.9	6.7	6.7	7.7	6.1	7.3	5.9	4.2	2.8	4.1	4.2	2.3	99.9
11-Aug	1.4	3.0	3.9	4.6	6.5	2.6	2.5	6.7	3.8	4.2	4.9	5.5	5.9	2.8	2.9	1.2	3.3	6.9	3.7	4.1	5.2	6.2	5.0	3.5	100.3
12-Aug	1.5	0.9	0.9	1.5	1.0	2.9	1.9	2.4	3.6	3.3	4.1	4.9	6.6	6.5	7.6	8.6	8.1	7.3	7.3	5.4	3.2	5.2	3.4	1.8	99.9
13-Aug	3.2	2.6	2.8	3.1	3.2	3.4	5.4	7.4	6.9	6.6	6.1	5.6	4.9	4.1	4.6	3.2	3.1	2.6	4.1	4.5	4.4	4.8	1.8	1.5	99.9
14-Aug	2.2	1.7	0.7	1.1	1.3	1.9	2.5	3.3	8.1	5.3	4.6	5.3	5.2	4.6	5.4	5.6	6.0	8.0	5.6	4.5	6.3	6.1	3.1	1.5	99.9
15-Aug	2.7	1.9	1.8	1.6	2.4	3.7	2.9	5.7	4.2	4.9	4.1	5.7	5.8	7.5	6.8	7.4	5.0	8.0	5.8	3.6	3.6	2.5	1.3	1.2	100.1
16-Aug	2.3	2.7	2.0	3.1	1.7	2.9	4.9	3.0	4.1	3.3	4.5	5.1	7.8	5.9	5.5	5.3	3.7	4.6	4.0	3.9	4.3	5.5	6.3	3.7	100.1
17-Aug	2.6	2.3	2.0	2.2	2.3	3.6	4.0	3.3	3.4	3.1	3.3	3.8	3.8	3.6	5.9	5.4	5.4	5.0	6.0	6.6	6.5	4.7	5.5	5.7	100.0
18-Aug	5.1	3.9	4.6	3.9	3.9	4.8	5.2	5.0	4.1	4.1	4.5	5.2	4.5	4.9	4.9	4.2	3.1	2.0	1.3	2.5	4.0	4.2	4.1	6.0	100.0
19-Aug	5.0	3.0	3.1	2.3	2.9	2.3	4.0	5.6	7.1	6.5	4.9	5.2	5.9	4.9	3.2	2.5	1.8	1.1	1.6	4.5	5.9	7.3	5.6	3.7	99.9
20-Aug	4.4	3.7	2.3	2.1	1.8	3.0	5.1	6.3	7.6	7.3	6.8	7.0	5.9	4.1	2.9	2.1	1.9	2.2	3.8	4.2	4.4	3.1	3.8	4.2	100.0
21-Aug	4.7	4.7	3.7	1.7	1.6	2.9	4.4	4.4	5.2	3.6	3.2	2.8	3.2	3.7	2.0	1.3	1.1	2.2	5.9	8.7	7.9	7.2	6.7	7.2	100.0
22-Aug	7.3	6.1	5.2	3.3	3.1	3.8	3.0	4.2	4.9	5.2	4.0	3.7	2.7	2.9	4.1	3.8	2.2	1.5	1.8	3.7	6.4	5.7	7.1	4.2	99.9
23-Aug	4.2	3.3	6.0	9.1	6.6	4.8	4.0	4.2	3.5	5.1	3.5	3.7	3.9	5.8	3.4	4.0	3.5	4.5	2.2	2.1	2.1	2.6	3.4	4.4	99.9
24-Aug	3.5	3.9	5.9	7.1	8.5	7.8	6.5	5.5	4.4	1.6	2.3	1.6	3.2	2.7	3.3	3.3	2.8	4.3	1.7	2.4	2.6	3.7	4.6	3.8	100.0
25-Aug	4.9	4.8	4.1	4.6	5.6	6.7	6.9	5.7	5.6	5.5	5.3	5.0	3.5	3.0	2.0	2.1	2.5	1.8	2.1	2.8	4.5	3.8	3.7	3.6	100.1
	4.4	4.1	3.8	3.5	3.6	4.1	4.2	4.3	4.5	4.4	4.7	4.9	4.8	4.4	4.4	4.3	3.9	3.6	3.7	3.8	4.1	4.0	4.2	4.5	100.2

Appendix A.6. Kenai River south bank sonar counts by hour, 1 July through 25 August 1997. Counts expressed as percentage of daily total.

	Counts by Hour																							
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total
01-Jul	3.8	3.8	3.6	4.5	4.0	4.4	4.6	5.2	4.0	3.9	4.6	4.1	4.7	4.4	3.8	5.0	5.2	4.4	3.4	2.2	2.5	3.4	5.5	5.4	100.4
02-Jul	3.4	2.5	1.7	1.1	0.7	4.0	1.5	1.6	1.7	3.0	3.2	4.9	3.2	4.0	2.7	4.6	5.4	7.0	5.9	7.1	7.7	7.0	6.4	9.5	99.8
03-Jul	7.4	6.3	6.2	4.7	4.8	5.2	4.2	3.6	2.3	2.7	4.9	4.1	3.6	4.4	2.2	3.7	4.4	4.6	3.7	4.2	4.0	2.9	3.1	3.0	100.2
04-Jul	6.5	7.2	5.8	3.9	2.5	3.5	2.9	3.4	2.7	2.6	3.8	4.9	5.3	5.3	2.8	3.9	1.6	2.8	3.5	2.7	4.7	8.4	4.4	5.0	100.1
05-Jul	6.6	11.0	7.2	7.3	5.2	2.0	3.4	3.8	1.8	2.9	3.4	3.3	3.3	3.4	3.8	4.2	3.0	2.8	3.2	4.1	3.8	3.8	2.7	4.0	100.0
06-Jul	7.4	8.3	9.1	9.1	4.2	3.9	2.8	2.8	2.3	3.7	3.7	2.4	5.2	4.5	2.6	4.1	3.2	4.6	3.7	3.5	2.9	3.1	0.8	2.3	100.2
07-Jul	2.6	4.1	4.3	4.2	2.9	2.3	2.1	1.6	2.4	5.4	3.3	5.0	2.7	3.3	4.9	6.6	5.5	5.5	4.5	3.6	3.6	5.4	5.8	8.2	99.8
08-Jul	4.8	5.0	7.7	6.1	6.0	4.6	4.9	3.4	2.8	2.2	2.5	3.6	2.4	1.5	3.7	3.4	6.3	7.2	4.4	3.7	3.6	4.0	2.5	3.6	99.9
09-Jul	4.0	6.1	6.7	6.7	5.4	4.9	4.0	2.7	1.2	2.5	4.8	2.4	2.6	2.4	2.1	3.8	5.7	7.2	4.0	5.8	4.4	3.1	4.2	3.3	100.0
10-Jul	0.6	0.9	0.6	1.3	1.8	1.5	1.5	1.5	1.1	1.2	2.8	2.9	3.2	3.0	3.6	7.9	9.9	17.0	10.4	8.1	4.8	2.4	5.3	6.5	99.8
11-Jul	3.0	1.9	1.4	1.2	2.0	3.7	2.9	1.4	1.6	1.9	3.7	7.2	3.1	3.9	5.2	5.1	4.7	7.2	6.8	6.4	4.7	5.6	8.3	6.7	99.6
12-Jul	6.2	5.0	3.7	4.9	5.1	3.8	4.2	2.1	1.0	2.0	6.6	9.7	5.8	4.4	4.0	5.1	4.0	2.7	2.2	4.3	3.7	3.9	2.9	2.8	100.1
13-Jul	1.3	1.1	0.8	0.8	1.6	1.5	2.5	3.6	3.5	5.1	4.2	5.7	4.8	5.3	4.0	3.9	4.1	3.3	4.4	6.3	7.1	9.8	9.8	5.4	99.9
14-Jul	3.7	3.5	2.5	5.7	7.8	5.8	4.6	3.8	3.4	6.4	6.3	8.1	4.4	4.1	3.9	5.8	6.5	1.9	1.9	2.0	1.1	1.9	2.8	2.0	99.9
15-Jul	5.2	2.8	2.4	2.4	2.6	1.5	1.4	1.0	0.9	2.0	3.6	3.6	5.8	6.5	8.6	6.2	5.5	7.6	5.1	4.5	2.7	3.3	8.1	6.9	100.2
16-Jul	2.6	2.8	2.1	2.7	3.1	2.5	1.6	1.5	1.7	4.6	8.2	8.9	9.8	7.1	5.6	4.3	4.2	5.0	5.2	4.5	4.0	3.5	2.5	2.2	100.2
17-Jul	3.6	2.4	2.6	2.7	1.4	1.9	1.0	1.1	0.6	1.3	5.1	5.9	5.6	7.6	8.7	7.6	8.0	8.8	8.3	4.3	2.6	2.2	3.4	3.5	100.2
18-Jul	7.4	7.0	6.6	5.0	4.1	3.8	3.0	2.1	2.2	2.6	6.1	9.8	8.4	6.6	6.7	4.9	2.6	2.2	1.8	1.8	2.0	1.2	1.3	0.9	100.1
19-Jul	6.3	5.2	5.3	6.0	5.8	2.1	2.2	2.0	3.0	4.1	3.2	4.2	7.0	7.8	4.0	4.5	3.3	4.5	5.6	3.9	3.6	2.8	1.9	1.4	99.7
20-Jul	1.0	1.5	1.6	1.8	2.4	2.0	2.1	1.6	1.9	1.7	2.6	11.2	15.2	7.6	5.0	3.2	2.3	2.1	4.7	8.5	3.6	6.9	5.7	3.9	100.1
21-Jul	4.3	4.9	4.3	5.0	7.1	4.2	3.9	5.8	4.4	4.4	3.6	4.9	5.9	7.2	3.9	4.1	2.6	2.6	2.8	2.8	2.9	3.1	2.5	2.9	100.1
22-Jul	4.7	8.0	6.4	4.7	4.9	3.0	2.7	2.5	1.5	3.6	4.4	4.5	2.5	5.8	2.8	4.5	4.3	3.0	2.7	4.1	4.6	3.8	5.4	5.6	100.0
23-Jul	1.8	1.5	1.8	2.3	2.2	1.0	0.8	1.1	1.5	1.9	2.6	2.8	2.2	5.1	6.1	6.3	5.2	4.1	4.5	3.9	5.4	8.7	12.8	14.3	99.9
24-Jul	4.9	3.3	3.9	4.2	7.5	6.8	4.8	8.8	7.3	7.7	5.6	6.4	4.0	3.5	3.9	3.7	3.6	1.5	2.3	1.5	1.3	1.1	1.4	1.0	100.0
25-Jul	5.1	6.6	7.4	6.9	7.8	5.1	4.7	4.2	4.1	3.2	2.4	3.1	3.1	2.9	4.6	5.1	4.4	3.4	4.5	3.6	2.3	2.1	1.3	2.2	100.1
26-Jul	3.6	4.3	4.8	3.2	3.7	3.3	4.1	4.5	6.1	3.7	3.8	5.3	5.4	4.8	5.8	5.7	4.0	3.4	4.0	3.0	3.4	3.7	3.1	3.3	100.0
27-Jul	2.7	3.4	2.2	2.7	2.5	3.9	2.6	3.7	3.5	3.3	8.8	4.2	2.5	4.8	5.0	6.4	4.4	4.0	4.2	4.8	4.4	5.8	5.2	4.9	99.9
28-Jul	3.9	3.2	1.8	1.7	3.4	1.3	4.1	4.1	5.2	6.8	3.4	6.6	2.4	3.7	3.0	3.1	2.9	2.8	3.1	4.5	7.7	9.0	6.7	5.1	100.1
29-Jul	2.7	2.7	2.6	4.0	3.8	4.0	5.1	3.6	6.0	5.5	6.0	3.5	3.5	3.9	4.8	7.1	3.9	3.8	4.1	4.0	3.3	3.8	4.6	3.3	99.9
30-Jul	4.8	3.7	2.6	3.1	3.7	3.7	3.3	3.0	4.6	8.6	7.3	6.1	3.2	1.9	3.2	4.1	3.5	3.3	2.6	2.8	5.1	4.0	2.9	5.9	100.0

-Continued-

Appendix A.6. (p.2 of 2)

	Counts by Hour																							
Date	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0	19.0	20.0	21.0	22.0	23.0	24.0	Daily Total
31-Jul	3.9	4.1	2.5	2.3	3.7	4.7	4.9	3.0	4.1	4.1	5.3	10.3	8.9	5.1	4.2	3.3	3.4	2.9	2.7	2.5	2.6	3.4	5.7	2.5	100.1
01-Aug	4.0	2.8	2.2	2.0	1.6	2.8	2.9	2.9	3.3	3.2	4.4	6.1	7.9	4.0	3.8	4.2	6.1	6.4	6.0	3.2	4.6	3.3	5.0	7.3	100.0
02-Aug	9.7	6.6	4.4	3.1	3.3	4.4	3.2	3.7	4.9	4.0	3.3	4.8	6.3	5.4	3.3	3.6	2.5	2.9	3.0	4.0	2.8	4.0	3.1	3.8	100.1
03-Aug	2.9	3.5	2.5	1.9	1.8	3.4	3.7	4.4	4.5	3.2	2.5	3.8	5.0	2.9	3.6	4.8	3.7	4.5	4.3	6.3	7.9	6.2	6.2	6.5	100.0
04-Aug	3.1	2.9	2.0	2.7	1.9	3.8	5.7	3.3	4.5	6.1	4.5	5.1	8.2	6.8	4.8	4.4	5.2	3.3	4.1	4.0	4.3	4.1	2.5	2.6	99.9
05-Aug	3.0	4.0	3.9	3.7	3.4	2.7	2.4	3.0	3.9	2.7	3.2	3.8	5.9	4.5	7.0	3.0	2.9	2.4	2.5	4.7	8.4	7.2	5.5	6.2	99.9
06-Aug	1.7	2.8	3.7	2.8	2.5	2.5	3.0	2.9	3.9	3.7	4.4	8.4	4.4	11.2	8.4	5.6	4.6	2.5	2.5	3.3	3.4	3.9	3.7	4.0	99.8
07-Aug	4.7	6.0	7.3	5.1	4.8	3.4	3.4	2.2	3.8	2.7	3.9	5.1	5.6	3.3	3.1	5.7	4.0	3.6	3.2	3.4	4.1	5.7	3.5	2.3	99.9
08-Aug	2.3	3.1	2.3	2.8	3.1	2.5	3.2	2.4	2.8	3.2	3.9	3.6	2.6	4.1	10.0	14.2	10.8	6.8	3.8	5.0	2.7	1.6	1.9	1.0	99.7
09-Aug	3.7	2.9	2.5	4.6	4.9	3.7	4.5	5.7	4.3	4.9	5.4	4.3	5.5	6.6	6.4	3.4	3.2	3.0	2.5	5.3	5.4	3.7	2.0	1.5	99.9
10-Aug	2.6	2.3	4.0	2.9	4.1	4.2	3.2	3.4	4.2	2.5	2.5	4.2	5.3	3.2	4.7	8.0	4.9	4.0	7.4	3.6	3.9	3.9	5.0	6.1	100.1
11-Aug	1.7	1.5	1.2	1.2	1.0	1.8	3.2	4.6	5.5	3.8	2.4	3.8	3.7	4.8	3.8	6.7	7.5	4.3	6.3	6.0	8.5	6.6	6.6	3.4	99.9
12-Aug	2.2	1.5	1.3	1.5	1.2	1.2	1.6	1.4	2.0	3.1	1.9	2.1	4.3	4.2	10.0	13.9	9.7	8.2	6.5	5.3	7.8	3.2	2.9	3.2	100.2
13-Aug	2.9	2.5	2.5	3.0	3.6	3.8	2.5	3.8	3.6	2.5	2.1	2.5	4.8	4.7	5.8	7.1	7.2	6.7	6.8	4.5	5.7	4.6	4.1	3.0	100.3
14-Aug	3.3	2.2	1.0	1.2	1.1	2.7	3.1	4.0	4.6	4.4	4.5	4.1	4.9	6.1	6.3	7.7	8.6	4.9	4.7	5.7	3.2	3.8	4.2	3.6	99.9
15-Aug	2.9	2.6	0.9	1.5	1.2	2.1	3.0	3.6	3.4	7.1	4.5	8.5	8.1	7.9	5.8	4.2	4.2	4.5	4.8	4.1	4.0	3.1	4.7	3.4	100.1
16-Aug	2.7	2.8	2.6	1.7	1.6	1.7	2.5	2.4	3.2	4.2	3.5	4.3	5.1	6.4	7.1	8.2	5.4	7.5	1.8	5.0	4.4	4.4	4.6	3.9	100.0
17-Aug	1.4	1.7	1.7	1.2	1.6	2.9	2.3	2.4	3.4	2.2	2.3	3.7	4.9	5.8	8.1	8.5	7.8	6.5	7.4	5.3	5.8	4.5	4.5	4.4	100.3
18-Aug	2.8	2.0	3.0	2.8	2.3	2.5	2.7	4.5	3.8	5.0	3.0	4.5	6.3	9.1	10.1	7.7	4.0	3.3	4.3	4.0	3.4	3.5	2.3	3.1	100.0
19-Aug	2.1	1.7	2.4	2.2	2.6	5.2	3.3	4.4	4.6	3.5	5.7	8.5	6.9	9.5	6.2	3.1	4.2	1.9	1.8	3.3	3.7	4.6	4.5	4.1	100.0
20-Aug	2.3	2.5	1.4	1.0	1.1	1.8	3.0	2.8	3.5	3.7	3.4	2.8	6.9	7.3	6.2	5.0	4.1	2.8	4.4	5.7	5.6	8.2	9.9	4.5	99.9
21-Aug	2.9	3.8	3.9	1.3	1.8	1.0	2.1	3.2	3.6	4.1	5.7	8.9	8.1	9.2	8.5	6.2	1.8	1.6	1.6	3.4	5.6	6.8	0.0	5.0	100.1
22-Aug	4.7	7.2	11.0	10.0	3.7	3.5	6.2	4.4	4.3	4.1	5.1	3.7	4.4	3.4	4.2	3.2	2.2	1.3	0.9	1.1	2.1	2.8	4.1	2.3	99.9
23-Aug	4.1	3.0	5.4	3.5	5.5	4.6	6.6	5.1	3.2	3.3	3.0	2.5	4.0	5.0	6.2	6.0	8.4	5.7	3.4	3.5	1.6	2.0	2.5	1.8	99.9
24-Aug	1.8	2.9	2.2	2.7	4.0	4.0	4.0	4.7	3.6	3.8	4.3	4.2	4.2	5.9	8.7	5.9	5.9	6.0	4.4	4.7	5.1	3.0	2.8	1.3	100.1
25-Aug	1.8	2.1	2.4	1.8	2.1	3.1	4.1	6.2	5.7	5.2	5.3	6.9	6.9	4.4	5.2	3.6	4.2	3.1	3.7	3.6	4.6	3.5	4.9	5.7	100.1
	3.7	3.4	3.3	3.3	3.6	3.3	3.1	3.2	3.1	3.7	4.7	6.1	5.5	5.5	5.6	5.6	5.0	4.4	4.2	4.1	3.8	4.0	4.3	3.7	100.2

Appendix A.7. Kenai River north bank sonar counts by sector, 1 July through 25 August 1997.

	Counts by Sector													
Date	1	2	3	4	5	6	7	8	9	10	11	12	Daily Total	Cum Total
01-Jul	67	209	79	106	107	194	40	74	189	309	351	456	2,181	2,181
02-Jul	48	95	76	76	86	78	406	503	600	502	391	340	3,201	5,382
03-Jul	182	312	103	80	106	118	265	422	423	449	391	347	3,198	8,580
04-Jul	1,138	1,886	424	198	51	20	41	223	263	184	148	137	4,713	13,293
05-Jul	1,462	2,271	520	156	147	34	84	105	194	200	110	155	5,438	18,731
06-Jul	210	971	309	79	48	13	26	107	202	256	227	204	2,652	21,383
07-Jul	303	651	197	75	30	13	54	234	249	283	185	167	2,441	23,824
08-Jul	710	1,558	541	353	36	17	68	192	201	205	235	80	4,196	28,020
09-Jul	219	567	237	69	41	13	34	215	164	194	125	113	1,989	30,009
10-Jul	1,669	7,946	1,485	520	353	158	117	84	85	124	96	87	12,724	42,733
11-Jul	167	14,286	13,458	2,573	375	78	112	26	12	12	0	0	31,099	73,832
12-Jul	225	15,476	16,447	4,301	901	261	400	162	115	70	23	2	38,383	112,215
13-Jul	16	6,887	17,182	6,839	1,709	554	513	204	128	59	59	46	34,196	146,411
14-Jul	283	15,220	11,500	2,733	1,473	532	377	241	151	169	211	150	33,040	179,451
15-Jul	4	1,044	4,236	2,689	854	315	505	270	135	52	31	27	10,160	189,611
16-Jul	11	3,235	9,207	3,140	925	502	1,009	805	322	146	110	84	19,496	209,107
17-Jul	1,394	15,405	17,455	4,665	948	586	400	342	130	92	35	26	41,478	250,585
18-Jul	1,213	17,276	18,334	5,062	633	216	188	214	84	56	41	25	43,342	293,927
19-Jul	58	728	677	129	72	104	212	278	195	254	177	92	2,976	296,903
20-Jul	1,461	5,688	1,572	513	300	179	351	362	321	371	289	135	11,542	308,445
21-Jul	2,677	7,857	1,103	200	199	128	226	223	220	236	227	214	13,510	321,955
22-Jul	165	1,475	1,510	710	262	167	243	148	139	162	149	128	5,258	327,213
23-Jul	565	6,407	5,830	2,123	1,595	849	537	352	238	221	166	216	19,099	346,312
24-Jul	1,253	12,512	11,025	4,164	3,920	2,165	1,167	497	384	249	254	281	37,871	384,183
25-Jul	57	761	1,257	523	345	287	298	223	377	307	257	303	4,995	389,178
26-Jul	21	352	576	384	191	151	230	307	276	345	307	224	3,364	392,542
27-Jul	75	207	83	30	66	126	99	97	127	361	252	339	1,862	394,404
28-Jul	75	308	249	136	85	84	203	95	266	325	241	320	2,387	396,791
29-Jul	574	1,028	422	360	199	245	147	137	181	212	186	177	3,868	400,659
30-Jul	923	1,103	527	304	270	238	159	120	133	170	148	183	4,278	404,937
31-Jul	388	894	439	167	279	297	159	95	84	101	134	143	3,180	408,117
01-Aug	659	570	150	76	152	181	115	70	84	72	159	122	2,410	410,527
02-Aug	344	268	69	48	117	118	69	36	36	69	49	71	1,294	411,821
03-Aug	444	495	302	136	283	202	112	62	77	83	111	95	2,402	414,223
04-Aug	511	242	94	66	189	172	114	59	54	97	106	117	1,821	416,044
05-Aug	459	435	99	59	106	216	130	63	54	127	111	98	1,957	418,001
06-Aug	3,041	3,750	225	129	105	156	60	40	64	60	70	103	7,803	425,804
07-Aug	2,772	3,409	371	206	168	258	154	81	88	56	72	74	7,689	433,493
08-Aug	3,422	7,380	364	236	180	238	50	32	37	56	90	151	12,236	445,729
09-Aug	3,899	7,653	217	67	56	247	24	30	7	34	28	46	12,308	458,037
10-Aug	1,545	5,196	765	130	138	87	135	59	28	20	34	49	8,186	466,223
11-Aug	1,507	6,248	2,961	369	251	93	36	20	4	4	29	24	11,546	477,769
12-Aug	40	8,748	5,084	239	317	153	12	21	10	3	2	0	14,629	492,398
13-Aug	1	4,861	6,733	529	225	58	2	3	1	0	0	0	12,413	504,811
14-Aug	34	6,306	3,512	301	76	42	27	32	19	4	1	2	10,356	515,167
15-Aug	174	6,127	2,808	242	129	100	14	24	15	13	9	5	9,660	524,827
16-Aug	66	3,938	2,010	138	37	16	8	25	11	2	1	1	6,253	531,080
17-Aug	121	6,527	4,313	426	147	41	13	21	10	5	4	7	11,635	542,715
18-Aug	40	5,125	4,089	560	118	43	24	33	19	9	2	3	10,065	552,780
19-Aug	6	3,487	4,482	1,151	203	81	39	31	17	11	4	4	9,516	562,296
20-Aug	62	3,115	4,521	727	144	86	21	26	14	3	8	9	8,736	571,032
21-Aug	0	1,802	2,890	574	85	46	25	52	31	11	4	7	5,527	576,559
22-Aug	54	3,173	2,272	423	127	110	33	79	51	11	11	16	6,360	582,919
23-Aug	143	5,550	1,646	161	80	71	34	67	46	20	8	6	7,832	590,751
24-Aug	333	6,233	2,182	381	129	111	77	97	39	9	3	12	9,606	600,357
25-Aug	1,188	6,551	1,034	164	66	56	17	34	45	13	9	10	9,187	609,544
Total	38,478	251,804	190,253	50,995	20,234	11,682	10,015	8,454	7,449	7,468	6,479	6,233	609,544	

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Appendix A.8. Kenai River south bank sonar counts by sector, 1 July through 25 August 1997.

Date	Counts by Sector												Daily Total	Cum Total
	1	2	3	4	5	6	7	8	9	10	11	12		
01-Jul	105	124	89	156	229	255	195	51	53	6	8	31	1,280	1,280
02-Jul	84	113	337	251	403	290	170	105	48	3	12	34	1,847	3,127
03-Jul	112	221	614	323	501	521	392	78	54	2	4	13	2,835	5,962
04-Jul	105	387	701	286	439	383	418	52	46	2	1	11	2,831	8,793
05-Jul	160	758	1,061	383	564	405	266	56	51	3	4	16	3,725	12,518
06-Jul	198	274	548	296	182	396	124	35	38	12	1	4	2,108	14,626
07-Jul	38	231	397	211	206	174	98	17	27	3	0	5	1,407	16,033
08-Jul	185	410	607	221	489	514	164	28	42	6	2	13	2,481	18,514
09-Jul	77	229	371	170	317	331	129	58	47	5	1	23	1,778	20,292
10-Jul	385	2,176	2,406	942	1,558	1,053	527	112	114	10	0	12	9,095	29,387
11-Jul	1,982	8,808	5,981	1,659	1,677	742	180	90	79	12	11	24	21,245	50,632
12-Jul	1,513	5,790	5,258	2,053	2,744	1,488	418	121	108	17	2	35	19,547	70,179
13-Jul	2,003	10,866	9,862	4,109	3,163	1,388	242	55	72	8	2	53	31,823	102,002
14-Jul	3,207	11,420	8,034	2,802	2,028	1,692	224	57	49	6	0	28	29,544	131,546
15-Jul	446	1,687	2,368	1,065	1,423	871	277	69	80	13	3	48	8,350	139,896
16-Jul	789	4,996	5,887	2,580	3,089	1,548	444	105	95	15	5	65	19,618	159,514
17-Jul	3,250	12,175	9,664	3,514	2,626	1,118	236	49	58	6	4	18	32,516	192,030
18-Jul	5,469	16,952	12,013	3,519	1,738	808	165	53	26	5	6	36	40,768	232,798
19-Jul	547	1,148	1,080	455	512	309	87	22	24	8	2	23	4,217	237,015
20-Jul	366	2,730	3,130	1,355	1,572	925	273	50	72	7	3	42	10,525	247,540
21-Jul	251	1,929	2,197	1,081	841	840	350	137	59	19	12	29	7,745	255,285
22-Jul	104	1,018	1,586	627	802	656	253	59	56	5	2	82	5,250	260,535
23-Jul	261	3,675	4,616	1,827	1,950	1,130	372	77	57	6	41	80	14,092	274,627
24-Jul	1,557	7,888	10,699	4,746	2,835	2,750	925	137	92	11	5	41	31,686	306,313
25-Jul	672	1,970	1,400	659	576	640	224	65	53	4	2	32	6,297	312,610
26-Jul	228	883	909	410	454	487	158	47	52	8	0	24	3,640	316,250
27-Jul	138	461	507	265	358	301	117	64	47	4	4	17	2,283	318,533
28-Jul	144	679	614	232	372	344	114	37	35	3	7	35	2,616	321,149
29-Jul	295	1,068	882	277	391	288	119	64	47	3	4	26	3,464	324,613
30-Jul	233	837	612	247	294	256	90	37	19	4	1	23	2,653	327,266
31-Jul	425	1,432	866	297	274	222	76	35	20	3	5	9	3,662	330,928
01-Aug	197	556	332	133	110	150	84	27	36	4	6	31	1,666	332,594
02-Aug	112	526	388	140	119	150	52	20	14	5	5	9	1,540	334,134
03-Aug	151	669	410	155	149	165	62	25	27	10	5	10	1,838	335,972
04-Aug	155	569	475	200	237	251	67	30	27	3	5	22	2,039	338,011
05-Aug	170	562	342	148	140	156	84	32	18	7	6	11	1,676	339,687
06-Aug	979	2,487	836	206	199	170	75	37	27	4	2	9	5,031	344,718
07-Aug	1,220	2,616	1,216	307	373	330	95	39	39	6	7	34	6,282	351,000
08-Aug	2,303	4,787	1,690	328	324	308	82	39	25	7	13	30	9,936	360,936
09-Aug	1,279	2,602	671	195	156	140	45	34	33	3	3	14	5,175	366,111
10-Aug	412	1,066	602	166	111	162	83	32	28	7	1	2	2,672	368,783
11-Aug	2,836	4,733	1,599	326	190	254	134	47	36	21	2	3	10,181	378,964
12-Aug	3,059	3,434	880	205	124	96	69	22	15	10	6	4	7,924	386,888
13-Aug	1,732	2,554	764	161	86	116	51	30	23	10	10	5	5,542	392,430
14-Aug	2,860	2,520	726	250	133	111	62	21	18	11	10	9	6,731	399,161
15-Aug	2,612	1,721	483	154	89	84	48	20	39	34	11	3	5,298	404,459
16-Aug	2,150	1,639	545	137	67	83	54	22	21	18	9	2	4,747	409,206
17-Aug	3,007	3,148	948	182	71	79	53	17	14	18	5	7	7,549	416,755
18-Aug	1,403	2,300	957	222	77	95	73	23	11	14	11	3	5,189	421,944
19-Aug	1,452	2,491	1,321	349	72	68	64	25	24	30	21	7	5,924	427,868
20-Aug	1,307	2,288	1,145	286	63	61	66	19	29	39	14	5	5,322	433,190
21-Aug	1,353	2,893	2,037	557	103	116	111	26	24	24	7	0	7,251	440,441
22-Aug	1,732	2,919	1,614	359	147	133	92	60	41	17	3	10	7,127	447,568
23-Aug	1,693	2,982	1,491	316	97	135	70	33	50	4	2	22	6,895	454,463
24-Aug	780	3,077	2,851	681	165	187	81	30	29	5	2	16	7,904	462,367
25-Aug	1,033	2,442	2,199	505	157	174	91	27	40	7	2	13	6,690	469,057
Total	61,314	160,914	121,816	43,486	38,166	26,677	9,473	2,737	2,402	537	322	1,213	469,057	

FN: 97KE2SC.XLS

Appendix A.9. Kenai River north bank sonar counts by sector, 1 July through 25 August 1997. Counts expressed as percentage of daily total.

	Counts by Sector												
Date	1	2	3	4	5	6	7	8	9	10	11	12	Daily Total
01-Jul	3.1	9.6	3.6	4.9	4.9	8.9	1.8	3.4	8.7	14.2	16.1	20.9	100.1
02-Jul	1.5	3.0	2.4	2.4	2.7	2.4	12.7	15.7	18.7	15.7	12.2	10.6	100.0
03-Jul	5.7	9.8	3.2	2.5	3.3	3.7	8.3	13.2	13.2	14.0	12.2	10.9	100.0
04-Jul	24.1	40.0	9.0	4.2	1.1	0.4	0.9	4.7	5.6	3.9	3.1	2.9	99.9
05-Jul	26.9	41.8	9.6	2.9	2.7	0.6	1.5	1.9	3.6	3.7	2.0	2.9	100.1
06-Jul	7.9	36.6	11.7	3.0	1.8	0.5	1.0	4.0	7.6	9.7	8.6	7.7	100.1
07-Jul	12.4	26.7	8.1	3.1	1.2	0.5	2.2	9.6	10.2	11.6	7.6	6.8	100.0
08-Jul	16.9	37.1	12.9	8.4	0.9	0.4	1.6	4.6	4.8	4.9	5.6	1.9	100.0
09-Jul	11.0	28.5	11.9	3.5	2.1	0.7	1.7	10.8	8.2	9.8	6.2	5.7	100.1
10-Jul	13.1	62.4	11.7	4.1	2.8	1.2	0.9	0.7	0.7	1.0	0.8	0.7	100.1
11-Jul	0.5	45.9	43.3	8.3	1.2	0.3	0.4	0.1	0.0	0.0	0.0	0.0	100.0
12-Jul	0.6	40.3	42.8	11.2	2.3	0.7	1.0	0.4	0.3	0.2	0.1	0.0	99.9
13-Jul	0.0	20.1	50.2	20.0	5.0	1.6	1.5	0.6	0.4	0.2	0.2	0.1	99.9
14-Jul	0.9	46.1	34.8	8.3	4.5	1.6	1.1	0.7	0.5	0.5	0.6	0.5	100.1
15-Jul	0.0	10.3	41.7	26.5	8.4	3.1	5.0	2.7	1.3	0.5	0.3	0.3	100.1
16-Jul	0.1	16.6	47.2	16.1	4.7	2.6	5.2	4.1	1.7	0.7	0.6	0.4	100.0
17-Jul	3.4	37.1	42.1	11.2	2.3	1.4	1.0	0.8	0.3	0.2	0.1	0.1	100.0
18-Jul	2.8	39.9	42.3	11.7	1.5	0.5	0.4	0.5	0.2	0.1	0.1	0.1	100.1
19-Jul	1.9	24.5	22.7	4.3	2.4	3.5	7.1	9.3	6.6	8.5	5.9	3.1	99.8
20-Jul	12.7	49.3	13.6	4.4	2.6	1.6	3.0	3.1	2.8	3.2	2.5	1.2	100.0
21-Jul	19.8	58.2	8.2	1.5	1.5	0.9	1.7	1.7	1.6	1.7	1.7	1.6	100.1
22-Jul	3.1	28.1	28.7	13.5	5.0	3.2	4.6	2.8	2.6	3.1	2.8	2.4	99.9
23-Jul	3.0	33.5	30.5	11.1	8.4	4.4	2.8	1.8	1.2	1.2	0.9	1.1	99.9
24-Jul	3.3	33.0	29.1	11.0	10.4	5.7	3.1	1.3	1.0	0.7	0.7	0.7	100.0
25-Jul	1.1	15.2	25.2	10.5	6.9	5.7	6.0	4.5	7.5	6.1	5.1	6.1	99.9
26-Jul	0.6	10.5	17.1	11.4	5.7	4.5	6.8	9.1	8.2	10.3	9.1	6.7	100.0
27-Jul	4.0	11.1	4.5	1.6	3.5	6.8	5.3	5.2	6.8	19.4	13.5	18.2	99.9
28-Jul	3.1	12.9	10.4	5.7	3.6	3.5	8.5	4.0	11.1	13.6	10.1	13.4	99.9
29-Jul	14.8	26.6	10.9	9.3	5.1	6.3	3.8	3.5	4.7	5.5	4.8	4.6	99.9
30-Jul	21.6	25.8	12.3	7.1	6.3	5.6	3.7	2.8	3.1	4.0	3.5	4.3	100.1
31-Jul	12.2	28.1	13.8	5.3	8.8	9.3	5.0	3.0	2.6	3.2	4.2	4.5	100.0
01-Aug	27.3	23.7	6.2	3.2	6.3	7.5	4.8	2.9	3.5	3.0	6.6	5.1	100.1
02-Aug	26.6	20.7	5.3	3.7	9.0	9.1	5.3	2.8	2.8	5.3	3.8	5.5	99.9
03-Aug	18.5	20.6	12.6	5.7	11.8	8.4	4.7	2.6	3.2	3.5	4.6	4.0	100.2
04-Aug	28.1	13.3	5.2	3.6	10.4	9.4	6.3	3.2	3.0	5.3	5.8	6.4	100.0
05-Aug	23.5	22.2	5.1	3.0	5.4	11.0	6.6	3.2	2.8	6.5	5.7	5.0	100.0
06-Aug	39.0	48.1	2.9	1.7	1.3	2.0	0.8	0.5	0.8	0.8	0.9	1.3	100.1
07-Aug	36.1	44.3	4.8	2.7	2.2	3.1	2.0	1.1	1.1	0.7	0.9	1.0	100.0
08-Aug	28.0	60.3	3.0	1.9	1.5	1.9	0.4	0.3	0.3	0.5	0.7	1.2	100.0
09-Aug	31.7	62.2	1.8	0.5	0.5	2.0	0.2	0.2	0.1	0.3	0.2	0.4	100.1
10-Aug	18.9	63.5	9.3	1.6	1.7	1.1	1.6	0.7	0.3	0.2	0.4	0.6	99.9
11-Aug	13.1	54.1	25.6	3.2	2.2	0.8	0.3	0.2	0.0	0.0	0.3	0.2	100.0
12-Aug	0.3	59.8	34.8	1.6	2.2	1.0	0.1	0.1	0.1	0.0	0.0	0.0	100.0
13-Aug	0.0	39.2	54.2	4.3	1.8	0.5	0.0	0.0	0.0	0.0	0.0	0.0	100.0
14-Aug	0.3	60.9	33.9	2.9	0.7	0.4	0.3	0.3	0.2	0.0	0.0	0.0	99.9
15-Aug	1.8	63.4	29.1	2.5	1.3	1.0	0.1	0.2	0.2	0.1	0.1	0.1	99.9
16-Aug	1.1	63.0	32.1	2.2	0.6	0.3	0.1	0.4	0.2	0.0	0.0	0.0	100.0
17-Aug	1.0	56.1	37.1	3.7	1.3	0.4	0.1	0.2	0.1	0.0	0.0	0.1	100.1
18-Aug	0.4	50.9	40.6	5.6	1.2	0.4	0.2	0.3	0.2	0.1	0.0	0.0	99.9
19-Aug	0.1	36.6	47.1	12.1	2.1	0.9	0.4	0.3	0.2	0.1	0.0	0.0	99.9
20-Aug	0.7	35.7	51.8	8.3	1.6	1.0	0.2	0.3	0.2	0.0	0.1	0.1	100.0
21-Aug	0.0	32.6	52.3	10.4	1.5	0.8	0.5	0.9	0.6	0.2	0.1	0.1	100.0
22-Aug	0.8	49.9	35.7	6.7	2.0	1.7	0.5	1.2	0.8	0.2	0.2	0.3	100.0
23-Aug	1.8	70.9	21.0	2.1	1.0	0.9	0.4	0.9	0.6	0.3	0.1	0.1	100.1
24-Aug	3.5	64.9	22.7	4.0	1.3	1.2	0.8	1.0	0.4	0.1	0.0	0.1	100.0
25-Aug	12.9	71.3	11.3	1.8	0.7	0.6	0.2	0.4	0.5	0.1	0.1	0.1	100.0
Total	6.3	41.3	31.2	8.4	3.3	1.9	1.6	1.4	1.2	1.2	1.1	1.0	99.9

FN: 97KE1SP.XLS

Appendix A.10. Kenai River south bank sonar counts by sector, 1 July through 25 August 1997. Counts expressed as percentage of daily total.

	Counts by Sector												
Date	1	2	3	4	5	6	7	8	9	10	11	12	Daily Total
01-Jul	8.0	9.7	7.0	12.2	17.9	19.9	15.2	4.0	2.6	0.5	0.6	2.4	100.0
02-Jul	4.5	6.1	18.2	13.6	21.8	15.7	9.2	5.7	2.4	0.2	0.6	1.8	99.8
03-Jul	4.0	7.8	21.7	11.4	17.7	18.4	13.8	2.8	1.9	0.1	0.1	0.5	100.2
04-Jul	3.7	13.7	24.8	10.1	15.5	13.5	14.8	1.8	1.6	0.1	0.0	0.4	100.0
05-Jul	4.3	20.3	28.5	10.3	15.1	10.8	7.1	1.5	1.4	0.1	0.1	0.4	99.9
06-Jul	9.4	13.0	26.0	14.0	8.6	18.8	5.9	1.7	1.8	0.6	0.0	0.2	100.0
07-Jul	2.7	16.4	28.2	15.0	14.6	12.4	7.0	1.2	1.9	0.2	0.0	0.4	100.0
08-Jul	7.5	16.5	24.5	8.9	19.7	12.7	6.6	1.1	1.7	0.2	0.1	0.5	100.0
09-Jul	4.3	12.9	20.9	9.6	17.8	18.6	7.3	3.3	3.8	0.3	0.1	1.3	100.2
10-Jul	4.2	23.9	26.5	10.4	17.1	11.6	3.6	1.2	1.3	0.1	0.0	0.1	100.0
11-Jul	9.3	41.5	28.2	7.8	7.9	3.5	0.8	0.4	0.4	0.1	0.1	0.1	100.1
12-Jul	7.7	29.6	26.9	10.5	14.0	7.6	2.1	0.6	0.6	0.1	0.0	0.2	99.9
13-Jul	6.3	34.1	31.0	12.9	9.9	4.4	0.8	0.2	0.2	0.0	0.0	0.2	100.0
14-Jul	10.9	38.7	27.2	9.5	6.9	5.7	0.8	0.2	0.2	0.0	0.0	0.1	100.2
15-Jul	5.3	20.2	28.4	12.8	17.0	10.4	3.3	0.8	1.0	0.2	0.0	0.6	100.0
16-Jul	4.0	25.5	30.0	13.2	15.7	7.9	2.3	0.5	0.5	0.1	0.0	0.3	100.0
17-Jul	10.0	37.4	29.7	10.2	8.1	3.4	0.7	0.2	0.2	0.0	0.0	0.1	100.0
18-Jul	13.4	41.6	29.5	8.6	4.3	2.0	0.4	0.1	0.1	0.0	0.0	0.1	100.1
19-Jul	13.0	27.2	25.6	10.8	12.1	7.3	2.1	0.5	0.6	0.2	0.0	0.5	99.9
20-Jul	3.5	25.9	29.7	12.9	14.9	8.8	2.6	0.5	0.7	0.1	0.0	0.4	100.0
21-Jul	3.2	24.9	28.4	14.0	10.9	10.8	4.5	1.8	0.8	0.2	0.2	0.4	100.1
22-Jul	2.0	19.4	30.2	11.9	15.3	12.5	4.8	1.1	1.1	0.1	0.0	1.6	100.0
23-Jul	1.9	26.1	32.8	13.0	13.8	8.0	2.6	0.5	0.4	0.0	0.3	0.6	100.0
24-Jul	4.9	24.9	33.8	15.0	8.9	8.7	2.9	0.4	0.3	0.0	0.0	0.1	99.9
25-Jul	10.7	31.3	22.2	10.5	9.1	10.2	3.6	1.0	0.8	0.1	0.0	0.5	100.0
26-Jul	6.3	24.3	25.0	11.3	12.5	12.8	4.3	1.3	1.4	0.2	0.0	0.7	100.1
27-Jul	6.0	20.2	22.2	11.6	15.7	13.2	5.1	2.8	2.1	0.2	0.2	0.7	100.0
28-Jul	5.5	26.0	23.5	8.9	14.2	13.1	4.4	1.4	1.3	0.1	0.3	1.3	100.0
29-Jul	8.5	30.8	25.5	8.0	11.3	8.3	3.4	1.8	1.4	0.1	0.1	0.8	100.0
30-Jul	8.8	31.5	23.1	9.3	11.1	9.6	3.4	1.4	0.7	0.2	0.0	0.9	100.0
31-Jul	11.6	39.1	23.6	8.1	7.5	6.1	2.1	0.9	0.5	0.1	0.1	0.2	99.9
01-Aug	11.8	33.4	19.9	8.0	6.6	9.0	5.0	1.6	2.2	0.2	0.4	1.9	100.0
02-Aug	7.3	34.2	25.2	9.1	7.7	9.7	3.4	1.3	0.9	0.3	0.3	0.6	100.0
03-Aug	8.2	36.4	22.3	8.4	8.1	9.0	3.4	1.4	1.5	0.5	0.3	0.5	100.0
04-Aug	7.6	27.9	23.2	9.8	11.6	12.3	3.3	1.5	1.3	0.1	0.2	1.1	99.9
05-Aug	10.1	33.5	20.4	8.8	8.4	9.3	5.0	1.9	1.1	0.4	0.4	0.7	100.0
06-Aug	19.5	49.4	16.6	4.1	4.0	3.4	1.5	0.7	0.5	0.1	0.0	0.2	100.0
07-Aug	19.4	41.6	19.4	4.9	5.9	5.3	1.5	0.6	0.6	0.1	0.1	0.5	99.9
08-Aug	23.2	48.2	17.0	3.3	3.3	3.1	0.8	0.4	0.3	0.1	0.1	0.3	100.1
09-Aug	24.7	50.3	13.0	3.8	3.0	2.7	0.9	0.7	0.6	0.1	0.1	0.3	100.2
10-Aug	15.4	39.9	22.5	6.2	4.2	6.1	3.1	1.2	1.0	0.3	0.0	0.1	100.0
11-Aug	27.9	46.5	15.7	3.2	1.9	2.5	1.3	0.5	0.4	0.2	0.0	0.0	100.1
12-Aug	38.6	43.3	11.1	2.6	1.6	1.2	0.9	0.3	0.2	0.1	0.1	0.1	100.1
13-Aug	31.3	46.1	13.8	2.9	1.6	2.1	0.9	0.5	0.4	0.2	0.2	0.1	100.1
14-Aug	42.5	37.4	10.8	3.7	2.0	1.6	0.9	0.3	0.3	0.2	0.1	0.1	99.9
15-Aug	49.3	32.5	9.1	2.9	1.7	1.6	0.9	0.4	0.7	0.6	0.2	0.1	100.0
16-Aug	45.3	34.5	11.5	2.9	1.4	1.7	1.1	0.5	0.4	0.4	0.2	0.0	99.9
17-Aug	39.8	41.7	12.6	2.4	0.9	1.0	0.7	0.2	0.2	0.2	0.1	0.1	99.9
18-Aug	27.0	44.3	18.4	4.3	1.5	1.8	1.4	0.4	0.2	0.3	0.2	0.1	99.9
19-Aug	24.5	42.0	22.3	5.9	1.2	1.1	1.1	0.4	0.4	0.5	0.4	0.1	99.9
20-Aug	24.6	43.0	21.5	5.4	1.2	1.1	1.2	0.4	0.5	0.7	0.3	0.1	100.0
21-Aug	18.7	39.9	28.1	7.7	1.4	1.6	1.5	0.4	0.3	0.3	0.1	0.0	100.0
22-Aug	24.3	41.0	22.6	5.0	2.1	1.9	1.3	0.8	0.6	0.2	0.0	0.1	99.9
23-Aug	24.6	43.2	21.6	4.6	1.4	2.0	1.0	0.5	0.7	0.1	0.0	0.3	100.0
24-Aug	9.9	38.9	36.1	8.6	2.1	2.4	1.0	0.4	0.4	0.1	0.0	0.2	100.1
25-Aug	15.4	36.5	32.9	7.5	2.3	2.6	1.4	0.4	0.6	0.1	0.0	0.2	99.9
Total	13.1	34.3	26.0	9.3	8.1	5.7	2.0	0.6	0.5	0.1	0.1	0.3	100.1

FN: 97KE2SP.XLS

Appendix A.11. Estimated salmon escapement adjacent to the north bank of the Kasilof River, 14 June through 12 August 1997.

Date	Daily	Cum	Date	Daily	Cum
14-Jun	293	293	14-Jul	523	75,097
15-Jun	498	791	15-Jul	499	75,596
16-Jun	661	1,452	16-Jul	579	76,175
17-Jun	1,547	2,999	17-Jul	4,341	80,516
18-Jun	2,317	5,316	18-Jul	1,477	81,993
19-Jun	3,806	9,122	19-Jul	1,163	83,156
20-Jun	4,563	13,685	20-Jul	1,031	84,187
21-Jun	2,478	16,163	21-Jul	626	84,813
22-Jun	1,509	17,672	22-Jul	800	85,613
23-Jun	1,822	19,494	23-Jul	2,696	88,309
24-Jun	3,955	23,449	24-Jul	1,971	90,280
25-Jun	5,491	28,940	25-Jul	979	91,259
26-Jun	4,469	33,409	26-Jul	662	91,921
27-Jun	5,289	38,698	27-Jul	624	92,545
28-Jun	1,838	40,536	28-Jul	546	93,091
29-Jun	2,440	42,976	29-Jul	642	93,733
30-Jun	2,475	45,451	30-Jul	1,275	95,008
01-Jul	2,305	47,756	31-Jul	951	95,959
02-Jul	6,763	54,519	1-Aug	624	96,583
03-Jul	1,638	56,157	2-Aug	664	97,247
04-Jul	7,951	64,108	3-Aug	473	97,720
05-Jul	660	64,768	4-Aug	439	98,159
06-Jul	616	65,384	5-Aug	732	98,891
07-Jul	2,287	67,671	6-Aug	1,263	100,154
08-Jul	392	68,063	7-Aug	1,772	101,926
09-Jul	711	68,774	8-Aug	2,117	104,043
10-Jul	1,031	69,805	9-Aug	1,427	105,470
11-Jul	1,702	71,507	10-Aug	1,207	106,677
12-Jul	1,650	73,157	11-Aug	1,449	108,126
13-Jul	1,417	74,574	12-Aug	1,199	109,325

FN: 97KA1C.XLS

Appendix A.12. Estimated salmon escapement adjacent to the south bank of the Kasilof River, 14 June through 12 August 1997.

Date	Daily	Cum	Date	Daily	Cum
14-Jun	392	392	14-Jul	1,276	90,833
15-Jun	666	1,058	15-Jul	1,250	92,083
16-Jun	885	1,943	16-Jul	2,879	94,962
17-Jun	2,067	4,010	17-Jul	3,445	98,407
18-Jun	1,111	5,121	18-Jul	1,010	99,417
19-Jun	1,853	6,974	19-Jul	824	100,241
20-Jun	5,401	12,375	20-Jul	799	101,040
21-Jun	4,605	16,980	21-Jul	457	101,497
22-Jun	2,880	19,860	22-Jul	1,092	102,589
23-Jun	2,436	22,296	23-Jul	2,621	105,210
24-Jun	3,177	25,473	24-Jul	1,636	106,846
25-Jun	5,851	31,324	25-Jul	1,294	108,140
26-Jun	8,557	39,881	26-Jul	1,146	109,286
27-Jun	6,818	46,699	27-Jul	1,192	110,478
28-Jun	2,521	49,220	28-Jul	2,004	112,482
29-Jun	3,659	52,879	29-Jul	1,456	113,938
30-Jun	5,955	58,834	30-Jul	1,961	115,899
01-Jul	3,032	61,866	31-Jul	1,602	117,501
02-Jul	4,323	66,189	1-Aug	1,508	119,009
03-Jul	2,211	68,400	2-Aug	1,960	120,969
04-Jul	4,052	72,452	3-Aug	1,714	122,683
05-Jul	1,499	73,951	4-Aug	1,473	124,156
06-Jul	701	74,652	5-Aug	3,145	127,301
07-Jul	2,437	77,089	6-Aug	4,507	131,808
08-Jul	730	77,819	7-Aug	4,718	136,526
09-Jul	1,362	79,181	8-Aug	5,381	141,907
10-Jul	1,676	80,857	9-Aug	3,970	145,877
11-Jul	2,492	83,349	10-Aug	3,311	149,188
12-Jul	2,489	85,838	11-Aug	4,477	153,665
13-Jul	3,719	89,557	12-Aug	3,035	156,700

FN:STKA2CNE.S

Appendix A.13. Kasilof River north bank sonar counts by hour, 14 June through 12 August 1997.

	Counts by Hour																									
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total	Cum Total
14-Jun	1	0	0	0	2	0	0	0	0	0	36	10	8	1	1	0	0	3	0	6	1	2	5	0	76	76
15-Jun	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	78
16-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0	1	6	84
17-Jun	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	80	106	142	41	34	42	51	20	1,572	1,656
18-Jun	99	65	72	265	209	69	21	14	9	22	25	35	26	71	43	53	85	500	272	158	61	41	50	52	2,317	3,973
19-Jun	94	58	108	148	173	96	68	37	17	11	30	17	68	37	25	53	72	401	835	606	355	167	186	148	3,810	7,783
20-Jun	124	85	45	63	118	117	57	31	56	64	72	61	108	132	296	290	233	239	804	693	438	207	125	105	4,563	12,346
21-Jun	118	67	109	100	60	264	277	92	78	118	51	52	61	45	65	93	63	69	106	132	32	61	307	58	2,478	14,824
22-Jun	101	45	56	58	54	147	124	53	44	101	77	54	53	52	58	32	49	23	8	42	56	30	32	160	1,509	16,333
23-Jun	76	66	52	51	55	43	173	95	22	23	65	52	60	73	24	66	80	7	2	54	18	301	295	69	1,822	18,155
24-Jun	29	28	48	42	38	53	134	219	87	38	30	173	216	180	176	285	40	266	133	159	383	598	367	233	3,955	22,110
25-Jun	113	43	56	49	30	65	67	82	118	218	89	32	167	412	451	469	504	496	471	393	378	395	180	213	5,491	27,601
26-Jun	154	127	74	142	70	54	57	86	88	81	118	66	135	472	520	319	397	276	378	267	123	160	162	143	4,469	32,070
27-Jun	131	114	148	94	114	65	153	174	248	281	292	460	480	195	241	218	407	337	217	268	221	126	154	151	5,289	37,359
28-Jun	143	65	64	69	33	37	59	32	55	67	77	86	96	102	36	55	80	127	137	141	68	92	84	33	1,838	39,197
29-Jun	65	51	36	28	40	49	39	32	45	50	62	79	129	158	271	204	107	165	125	151	139	120	121	174	2,440	41,637
30-Jun	119	113	88	90	92	137	115	100	96	79	94	111	97	117	239	218	161	117	124	50	33	26	39	16	2,471	44,108
01-Jul	55	27	32	29	29	23	18	19	5	10	39	33	106	136	111	156	515	139	171	273	108	79	75	117	2,305	46,413
02-Jul	98	141	254	610	721	384	323	320	283	174	113	175	263	210	161	246	711	416	372	140	156	253	157	81	6,762	53,175
03-Jul	52	40	56	40	53	35	19	21	22	42	22	38	20	29	41	66	43	197	102	43	95	242	207	113	1,638	54,813
04-Jul	102	146	91	91	137	234	499	537	365	380	288	318	261	171	153	371	576	705	1,090	518	313	239	222	144	7,951	62,764
05-Jul	66	58	53	49	29	52	59	47	11	17	26	23	10	17	11	14	19	12	16	19	12	16	15	9	660	63,424
06-Jul	7	9	19	15	9	7	17	6	19	16	34	9	13	9	5	23	8	32	32	71	80	43	70	63	616	64,040
07-Jul	61	50	43	44	55	59	43	120	96	142	99	136	151	107	98	31	72	85	115	164	182	147	135	52	2,287	66,327
08-Jul	43	34	17	30	24	9	7	10	16	13	12	13	16	15	5	7	14	15	2	12	39	15	12	12	392	66,719
09-Jul	10	17	9	10	12	7	9	7	7	10	12	16	36	52	17	26	37	27	44	68	46	72	107	53	711	67,430
10-Jul	57	78	88	60	36	48	44	43	27	57	67	48	50	53	47	30	28	32	13	26	24	24	32	19	1,031	68,461
11-Jul	9	22	30	31	30	41	43	48	83	128	108	77	80	101	209	102	86	125	89	53	72	46	38	51	1,702	70,163
12-Jul	58	65	32	38	40	30	28	33	33	49	96	62	84	117	64	62	33	57	62	78	105	111	180	133	1,650	71,813
13-Jul	124	112	123	105	65	67	40	32	47	41	36	53	69	64	31	29	24	40	45	49	61	27	53	80	1,417	73,230

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Appendix A.13. (p.2 of 2)

	Counts by Hour																								
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total	Cum Total
14-Jul	59	44	18	19	19	19	17	7	13	19	24	39	16	31	21	15	25	17	20	12	14	28	13	14	523	73,753
15-Jul	16	4	9	6	17	17	23	12	24	18	13	19	24	22	23	39	48	35	18	37	21	18	14	19	496	74,249
16-Jul	20	27	17	28	32	49	28	15	20	21	24	23	24	17	15	21	47	33	9	12	35	19	20	24	580	74,829
17-Jul	36	20	25	38	45	52	35	15	24	26	39	378	368	412	284	279	561	519	190	262	212	223	174	124	4,341	79,170
18-Jul	132	108	94	144	164	161	48	53	41	44	85	38	27	39	34	41	26	46	36	33	24	29	16	14	1,477	80,647
19-Jul	19	12	14	33	42	30	16	26	47	36	44	35	20	22	29	38	29	111	85	72	48	108	150	100	1,166	81,813
20-Jul	87	77	63	60	83	111	82	37	37	39	24	16	22	22	14	12	26	24	45	31	24	39	24	32	1,031	82,844
21-Jul	19	27	21	33	51	37	53	32	22	29	33	33	14	15	10	14	11	4	16	59	38	22	19	14	626	83,470
22-Jul	8	12	10	15	20	24	33	67	36	39	42	43	44	25	19	15	18	23	35	92	89	23	26	42	800	84,270
23-Jul	49	58	78	65	46	45	90	201	169	92	89	83	157	149	179	120	103	177	154	180	192	131	50	35	2,692	86,962
24-Jul	59	123	135	178	102	31	81	71	105	152	64	60	114	112	95	91	58	69	53	39	40	64	41	26	1,963	88,925
25-Jul	18	84	37	44	40	39	26	18	11	24	66	51	27	51	58	60	57	44	48	50	37	18	32	32	972	89,897
26-Jul	26	21	18	22	15	28	37	32	5	14	25	56	55	29	33	32	33	35	32	24	26	11	15	31	655	90,552
27-Jul	34	21	21	20	26	30	22	20	22	29	17	23	32	21	79	28	64	24	27	21	5	7	18	13	624	91,176
28-Jul	43	28	25	17	15	29	16	21	15	15	11	20	21	21	51	46	39	33	10	14	4	23	18	12	547	91,723
29-Jul	14	24	19	24	33	33	22	34	13	28	21	19	19	26	33	46	47	45	43	30	15	10	27	17	642	92,365
30-Jul	22	28	26	43	69	54	54	56	24	34	30	39	47	47	40	104	90	118	101	61	39	47	41	63	1,277	93,642
31-Jul	35	38	25	40	54	67	72	63	69	53	32	42	17	22	42	31	30	61	43	30	26	26	13	23	954	94,596
01-Aug	18	34	28	16	30	41	30	50	22	30	24	12	15	22	21	19	23	30	40	14	29	19	33	24	624	95,220
02-Aug	24	28	26	10	42	30	40	15	17	22	16	36	38	28	38	43	39	22	26	29	16	15	31	33	664	95,884
03-Aug	16	18	20	27	19	24	21	23	19	17	19	20	19	27	13	24	28	23	15	27	15	3	11	25	473	96,357
04-Aug	22	34	24	24	26	28	20	14	12	9	14	20	16	17	25	16	11	18	11	14	16	15	9	24	439	96,796
05-Aug	30	23	17	20	29	17	16	20	21	24	17	49	51	69	63	44	40	36	35	22	30	22	14	23	732	97,528
06-Aug	57	60	49	50	75	82	60	38	53	53	32	39	59	84	51	34	32	54	71	64	63	39	40	24	1,263	98,791
07-Aug	86	104	81	73	60	57	73	69	99	49	69	48	102	99	109	82	93	94	74	52	47	44	38	70	1,772*	100,563
08-Aug	93	109	101	89	61	71	36	48	44	42	74	60	93	108	127	155	123	144	121	86	62	94	103	73	2,117	102,680
9-Aug	75	67	56	60	75	80	93	37	42	51	71	72	52	62	41	87	56	36	47	51	41	37	70	68	1,427	104,107
10-Aug	52	68	51	50	56	71	69	48	25	41	32	22	49	48	53	43	53	72	50	50	48	40	52	64	1,207	105,314
11-Aug	110	96	46	61	54	65	92	47	41	68	35	23	56	65	69	63	74	57	56	33	42	35	68	93	1,449	106,763
12-Aug	103	103	57	62	37	39	69	59	26	18	35	37	36	26	71	49	46	49	30	39	34	42	68	64	1,199	107,962
Total	3,557	3,292	3,080	3,789	3,831	3,719	3,933	3,604	3,161	3,434	3,257	3,810	4,563	4,932	5,205	5,275	6,454	7,098	7,448	6,215	4,966	4,937	4,709	3,723	107,962	

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Appendix A.14. Kasilof River south bank sonar counts by hour, 14 June through 12 August 1997.

	Counts by Hour																								Daily	Cum
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total	Total
14-Jun	19	27	27	26	29	11	4	3	11	7	78	2	10	3	3	0	0	0	0	0	0	0	0	0	260	260
15-Jun	11	24	56	80	106	79	24	17	17	13	15	7	11	18	5	6	29	38	13	16	14	11	26	30	666	926
16-Jun	29	45	77	97	166	119	82	48	35	25	13	17	5	3	4	5	14	20	13	7	14	18	7	21	884	1,810
17-Jun	13	65	154	185	345	259	144	103	126	140	92	45	47	49	43	45	68	47	23	15	7	25	5	21	2,066	3,876
18-Jun	36	42	37	72	139	112	49	16	17	37	29	33	24	31	32	50	40	31	34	23	48	56	60	63	1,111	4,987
19-Jun	63	42	59	107	143	271	203	145	102	78	41	58	42	40	102	51	46	44	56	27	27	16	40	50	1,853	6,840
20-Jun	68	89	98	145	284	709	415	213	228	357	334	327	300	285	215	133	65	70	93	86	295	317	144	131	5,401	12,241
21-Jun	72	103	113	170	244	479	652	416	382	436	338	149	175	187	81	107	110	69	81	122	10	21	17	71	4,605	16,846
22-Jun	86	71	122	123	238	326	427	186	175	183	177	62	56	49	59	41	59	40	68	105	90	67	62	8	2,880	19,726
23-Jun	34	48	64	85	126	105	210	276	149	75	118	90	78	59	86	66	70	56	39	66	151	197	109	79	2,436	22,162
24-Jun	57	26	71	67	104	147	213	475	255	141	204	308	222	176	72	70	56	24	47	106	108	81	68	79	3,177	25,339
25-Jun	126	119	158	215	355	352	281	211	550	646	466	499	560	344	140	94	120	87	61	72	70	155	68	97	5,846	31,185
26-Jun	269	228	268	286	452	510	382	558	470	433	1,022	786	491	383	218	114	55	55	74	95	166	444	472	326	8,557	39,742
27-Jun	289	313	437	385	374	354	340	456	287	256	490	715	451	204	301	225	199	139	140	76	83	65	81	158	6,818	46,560
28-Jun	244	226	87	117	142	101	97	68	77	53	69	109	142	182	84	131	144	129	104	44	41	38	43	55	2,527	49,087
29-Jun	205	159	96	128	202	222	85	61	91	69	140	180	155	246	277	78	82	148	181	199	122	124	146	263	3,659	52,746
30-Jun	402	426	423	277	234	667	522	284	285	229	170	158	144	178	318	335	138	158	84	104	90	111	111	107	5,955	58,701
01-Jul	101	103	109	108	95	87	60	74	47	48	94	113	160	121	107	252	213	136	106	192	237	190	125	154	3,032	61,733
02-Jul	181	218	347	460	343	124	127	232	172	120	103	101	159	192	174	111	240	271	100	99	163	114	72	100	4,323	66,056
03-Jul	92	90	48	94	69	52	53	36	54	50	72	89	101	85	69	97	81	130	317	129	96	98	142	67	2,211	68,267
04-Jul	160	117	131	68	70	262	348	341	242	238	202	118	183	189	214	205	118	93	163	73	51	105	159	202	4,052	72,319
05-Jul	148	110	93	84	82	36	136	109	62	38	35	20	40	44	52	39	33	50	43	106	29	37	23	50	1,499	73,818
06-Jul	39	15	20	21	19	19	24	13	12	24	37	13	13	11	12	32	21	31	28	39	69	86	50	53	701	74,519
07-Jul	77	43	63	24	59	71	92	255	190	63	100	89	112	85	88	65	55	58	98	137	309	145	96	63	2,437	76,956
08-Jul	99	37	41	41	31	16	17	28	35	46	45	20	27	28	22	26	8	15	7	20	31	27	32	31	730	77,686
09-Jul	25	16	16	6	17	9	7	6	31	45	23	26	39	48	35	51	63	52	58	91	100	263	221	114	1,362	79,048
10-Jul	73	106	114	95	70	106	57	68	74	135	86	90	41	52	51	67	30	38	49	49	53	51	73	48	1,676	80,724
11-Jul	22	47	57	43	45	57	70	111	110	148	230	172	124	140	172	94	127	121	68	138	131	100	86	78	2,491	83,215
12-Jul	75	54	58	42	52	58	91	88	70	71	119	102	238	114	112	122	112	77	68	137	87	104	186	247	2,484	85,699
13-Jul	242	192	117	178	185	102	172	194	181	223	126	143	189	173	170	176	171	118	95	108	109	64	96	103	3,717	89,416

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Appendix A.14. (p.2 of 2)

Date	Counts by Hour																								Daily Total	Cum Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
14-Jul	157	147	131	86	87	65	69	61	55	21	26	15	17	19	18	25	29	28	38	42	35	33	43	29	1,276	90,692
15-Jul	43	34	23	36	34	18	40	27	20	21	49	53	25	19	25	85	154	96	64	61	44	84	76	119	1,250	91,942
16-Jul	83	126	119	194	212	226	166	167	120	113	105	68	69	75	80	66	134	70	96	91	101	142	141	115	2,879	94,821
17-Jul	70	97	153	231	202	79	63	115	66	114	125	104	114	62	66	64	284	249	229	68	283	232	167	208	3,445	98,266
18-Jul	162	57	76	60	74	103	36	37	34	27	24	16	18	18	44	16	29	23	31	18	33	27	28	19	1,010	99,276
19-Jul	19	24	16	25	19	26	19	25	23	31	25	26	14	15	32	15	15	21	55	36	49	95	113	86	824	100,100
20-Jul	54	37	46	33	34	64	76	32	36	51	71	24	29	10	11	24	10	14	19	26	9	13	40	36	799	100,899
21-Jul	16	14	12	16	18	21	33	55	25	29	20	16	17	12	12	7	20	9	5	25	28	22	13	12	457	101,356
22-Jul	15	12	4	14	15	26	46	75	30	51	82	90	53	47	36	43	21	41	49	84	76	47	55	80	1,092	102,448
23-Jul	51	36	22	22	48	37	59	233	307	93	59	230	256	148	73	60	44	67	106	138	300	167	38	27	2,621	105,069
24-Jul	84	99	72	28	34	69	52	56	75	95	42	61	58	87	68	78	51	59	60	71	46	114	97	80	1,636	106,705
25-Jul	59	58	38	48	41	84	52	44	36	58	144	68	63	40	68	38	18	42	51	18	39	66	56	65	1,294	107,999
26-Jul	40	33	33	31	45	50	41	42	40	47	30	100	106	59	58	59	44	27	36	24	24	60	38	79	1,146	109,145
27-Jul	41	38	35	40	58	77	67	59	51	34	59	18	56	53	34	72	61	57	48	47	38	38	54	57	1,192	110,337
28-Jul	39	88	76	60	79	123	143	108	83	25	84	41	34	51	62	163	189	140	116	93	62	47	60	38	2,004	112,341
29-Jul	43	64	69	77	86	82	80	59	54	68	47	42	32	32	21	72	190	81	32	41	61	40	40	43	1,456	113,797
30-Jul	52	30	53	62	85	66	69	80	93	80	82	51	87	52	42	78	71	190	148	130	99	95	90	77	1,962	115,759
31-Jul	34	49	45	25	89	109	95	91	85	69	72	83	58	52	27	60	59	65	87	54	94	95	63	42	1,602	117,361
01-Aug	30	36	37	53	68	89	80	63	56	71	63	43	39	53	57	56	57	56	97	71	57	82	109	85	1,508	118,869
02-Aug	95	58	27	49	58	51	173	125	138	109	148	114	44	38	43	77	48	36	75	112	127	62	78	74	1,959	120,828
03-Aug	43	44	43	40	50	77	163	143	152	90	78	64	66	60	64	38	60	41	41	49	70	79	74	85	1,714	122,542
04-Aug	57	33	37	44	56	57	99	125	108	45	106	131	52	37	28	54	39	42	16	34	102	53	58	60	1,473	124,015
05-Aug	57	41	39	40	43	82	59	146	299	158	168	201	212	152	95	136	130	152	194	167	197	157	88	131	3,144	127,159
06-Aug	124	113	104	81	119	234	261	268	326	266	167	185	241	198	255	201	237	167	239	171	163	212	90	85	4,507	131,666
07-Aug	105	133	104	91	109	162	318	222	197	286	299	386	192	133	215	219	201	209	209	156	156	269	188	159	4,718	136,384
08-Aug	133	95	109	95	167	240	270	275	333	229	335	422	279	232	288	151	304	336	221	179	165	186	193	144	5,381	141,765
9-Aug	107	96	113	100	118	176	287	302	186	186	227	188	201	220	163	204	130	161	139	135	96	147	162	126	3,970	145,735
10-Aug	114	76	86	67	91	111	192	159	176	110	132	153	273	124	157	190	204	40	127	199	145	117	124	144	3,311	149,046
11-Aug	102	65	69	60	95	163	209	232	158	161	203	213	229	241	338	307	222	247	275	222	190	175	143	158	4,477	153,523
12-Aug	169	132	100	89	114	173	51	43	255	109	125	94	95	84	118	152	161	186	205	27	27	271	139	116	3,035	156,558
Total	5,555	5,166	5,452	5,726	7,168	8,762	8,752	8,560	8,154	7,274	8,265	7,941	7,368	6,142	5,916	5,698	5,783	5,297	5,419	5,160	5,717	6,357	5,478	5,448	156,558	

Appendix A.15. Kasilof River north bank sonar counts by hour, 14 June through 12 August 1997. Counts expressed as percentage of daily total.

Date	Counts by Hour																							Daily Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
14-Jun	1.3	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	47.4	13.2	10.5	1.3	1.3	0.0	0.0	3.9	0.0	7.9	1.3	2.6	6.6	0.0	99.9
15-Jun	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	100.0
16-Jun	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.7	0.0	0.0	0.0	66.7	0.0	16.7	100.1
17-Jun	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	5.1	6.7	9.0	2.6	2.2	2.7	3.2	1.3	100.0
18-Jun	4.3	2.8	3.1	11.4	9.0	3.0	0.9	0.6	0.4	0.9	1.1	1.5	1.1	3.1	1.9	2.3	3.7	21.6	11.7	6.8	2.6	1.8	2.2	2.2	100.0
19-Jun	2.5	1.5	2.8	3.9	4.5	2.5	1.8	1.0	0.4	0.3	0.8	0.4	1.8	1.0	0.7	1.4	1.9	10.5	21.9	15.9	9.3	4.4	4.9	3.9	100.0
20-Jun	2.7	1.9	1.0	1.4	2.6	2.6	1.2	0.7	1.2	1.4	1.6	1.3	2.4	2.9	6.5	6.4	5.1	5.2	17.6	15.2	9.6	4.5	2.7	2.3	100.0
21-Jun	4.8	2.7	4.4	4.0	2.4	10.7	11.2	3.7	3.1	4.8	2.1	2.1	2.5	1.8	2.6	3.8	2.5	2.8	4.3	5.3	1.3	2.5	12.4	2.3	100.1
22-Jun	6.7	3.0	3.7	3.8	3.6	9.7	8.2	3.5	2.9	6.7	5.1	3.6	3.5	3.4	3.8	2.1	3.2	1.5	0.5	2.8	3.7	2.0	2.1	10.6	99.7
23-Jun	4.2	3.6	2.9	2.8	3.0	2.4	9.5	5.2	1.2	1.3	3.6	2.9	3.3	4.0	1.3	3.6	4.4	0.4	0.1	3.0	1.0	16.5	16.2	3.8	109.2
24-Jun	0.7	0.7	1.2	1.1	1.0	1.3	3.4	5.5	2.2	1.0	0.8	4.4	5.5	4.6	4.5	7.2	1.0	6.7	3.4	4.0	9.7	15.1	9.3	5.9	100.2
25-Jun	2.1	0.8	1.0	0.9	0.5	1.2	1.2	1.5	2.1	4.0	1.6	0.6	3.0	7.5	8.2	8.5	9.2	9.0	8.6	7.2	6.9	7.2	3.3	3.9	100.0
26-Jun	3.4	2.8	1.7	3.2	1.6	1.2	1.3	1.9	2.0	1.8	2.6	1.5	3.0	10.6	11.6	7.1	8.9	6.2	8.5	6.0	2.8	3.6	3.6	3.2	100.1
27-Jun	2.5	2.2	2.8	1.8	2.2	1.2	2.9	3.3	4.7	5.3	5.5	8.7	9.1	3.7	4.6	4.1	7.7	6.4	4.1	5.1	4.2	2.4	2.9	2.9	100.3
28-Jun	7.8	3.5	3.5	3.8	1.8	2.0	3.2	1.7	3.0	3.6	4.2	4.7	5.2	5.5	2.0	3.0	4.4	6.9	7.5	7.7	3.7	5.0	4.6	1.8	100.1
29-Jun	2.7	2.1	1.5	1.1	1.6	2.0	1.6	1.3	1.8	2.0	2.5	3.2	5.3	6.5	11.1	8.4	4.4	6.8	5.1	6.2	5.7	4.9	5.0	7.1	99.9
30-Jun	4.8	4.6	3.6	3.6	3.7	5.5	4.7	4.0	3.9	3.2	3.8	4.5	3.9	4.7	9.7	8.8	6.5	4.7	5.0	2.0	1.3	1.1	1.6	0.6	99.8
01-Jul	2.4	1.2	1.4	1.3	1.3	1.0	0.8	0.8	0.2	0.4	1.7	1.4	4.6	5.9	4.8	6.8	22.3	6.0	7.4	11.8	4.7	3.4	3.3	5.1	100.0
02-Jul	1.4	2.1	3.8	9.0	10.7	5.7	4.8	4.7	4.2	2.6	1.7	2.6	3.9	3.1	2.4	3.6	10.5	6.2	5.5	2.1	2.3	3.7	2.3	1.2	100.1
03-Jul	3.2	2.4	3.4	2.4	3.2	2.1	1.2	1.3	1.3	2.6	1.3	2.3	1.2	1.8	2.5	4.0	2.6	12.0	6.2	2.6	5.8	14.8	12.6	6.9	99.7
04-Jul	1.3	1.8	1.1	1.1	1.7	2.9	6.3	6.8	4.6	4.8	3.6	4.0	3.3	2.2	1.9	4.7	7.2	8.9	13.7	6.5	3.9	3.0	2.8	1.8	99.9
05-Jul	10.0	8.8	8.0	7.4	4.4	7.9	8.9	7.1	1.7	2.6	3.9	3.5	1.5	2.6	1.7	2.1	2.9	1.8	2.4	2.9	1.8	2.4	2.3	1.4	100.0
06-Jul	1.1	1.5	3.1	2.4	1.5	1.1	2.8	1.0	3.1	2.6	5.5	1.5	2.1	1.5	0.8	3.7	1.3	5.2	5.2	11.5	13.0	7.0	11.4	10.2	100.1
07-Jul	2.7	2.2	1.9	1.9	2.4	2.6	1.9	5.2	4.2	6.2	4.3	5.9	6.6	4.7	4.3	1.4	3.1	3.7	5.0	7.2	8.0	6.4	5.9	2.3	100.0
08-Jul	11.0	8.7	4.3	7.7	6.1	2.3	1.8	2.6	4.1	3.3	3.1	3.3	4.1	3.8	1.3	1.8	3.6	3.8	0.5	3.1	9.9	3.8	3.1	3.1	100.2
09-Jul	1.4	2.4	1.3	1.4	1.7	1.0	1.3	1.0	1.0	1.4	1.7	2.3	5.1	7.3	2.4	3.7	5.2	3.8	6.2	9.6	6.5	10.1	15.0	7.5	100.3
10-Jul	5.5	7.6	8.5	5.8	3.5	4.7	4.3	4.2	2.6	5.5	6.5	4.7	4.8	5.1	4.6	2.9	2.7	3.1	1.3	2.5	2.3	2.3	3.1	1.8	99.9
11-Jul	0.5	1.3	1.8	1.8	1.8	2.4	2.5	2.8	4.9	7.5	6.3	4.5	4.7	5.9	12.3	6.0	5.1	7.3	5.2	3.1	4.2	2.7	2.2	3.0	99.8
12-Jul	3.5	3.9	1.9	2.3	2.4	1.8	1.7	2.0	2.0	3.0	5.8	3.8	5.1	7.1	3.9	3.8	2.0	3.5	3.8	4.7	6.4	6.7	10.9	8.1	100.1
13-Jul	8.8	7.9	8.7	7.4	4.6	4.7	2.8	2.3	3.3	2.9	2.5	3.7	4.9	4.5	2.2	2.0	1.7	2.8	3.2	3.5	4.3	1.9	3.7	5.6	99.9

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Appendix A.15. (p.2 of 2)

Date	Counts by Hour																							Daily Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
14-Jul	11.3	8.4	3.4	3.6	3.6	3.6	3.3	1.3	2.5	3.6	4.6	7.5	3.1	5.9	4.0	2.9	4.8	3.3	3.8	2.3	2.7	5.4	2.5	2.7	100.1
15-Jul	3.2	0.8	1.8	1.2	3.4	3.4	4.6	2.4	4.8	3.6	2.6	3.8	4.8	4.4	4.6	7.9	9.7	7.1	3.6	7.5	4.2	3.6	2.8	3.8	99.6
16-Jul	3.4	4.7	2.9	4.8	5.5	8.4	4.8	2.6	3.4	3.6	4.1	4.0	4.1	2.9	2.6	3.6	8.1	5.7	1.6	2.1	6.0	3.3	3.4	4.1	99.7
17-Jul	0.8	0.5	0.6	0.9	1.0	1.2	0.8	0.3	0.6	0.6	0.9	8.7	8.5	9.5	6.5	6.4	12.9	12.0	4.4	6.0	4.9	5.1	4.0	2.9	100.0
18-Jul	8.9	7.3	6.4	9.7	11.1	10.9	3.2	3.6	2.8	3.0	5.8	2.6	1.8	2.6	2.3	2.8	1.8	3.1	2.4	2.2	1.6	2.0	1.1	0.9	99.9
19-Jul	1.6	1.0	1.2	2.8	3.6	2.6	1.4	2.2	4.0	3.1	3.8	3.0	1.7	1.9	2.5	3.3	2.5	9.5	7.3	6.2	4.1	9.3	12.9	8.6	100.1
20-Jul	8.4	7.5	6.1	5.8	8.1	10.8	8.0	3.6	3.6	3.8	2.3	1.6	2.1	2.1	1.4	1.2	2.5	2.3	4.4	3.0	2.3	3.8	2.3	3.1	100.1
21-Jul	3.0	4.3	3.4	5.3	8.1	5.9	8.5	5.1	3.5	4.6	5.3	5.3	2.2	2.4	1.6	2.2	1.8	0.6	2.6	9.4	6.1	3.5	3.0	2.2	99.9
22-Jul	1.0	1.5	1.3	1.9	2.5	3.0	4.1	8.4	4.5	4.9	5.3	5.4	5.5	3.1	2.4	1.9	2.3	2.9	4.4	11.5	11.1	2.9	3.3	5.3	100.4
23-Jul	1.8	2.2	2.9	2.4	1.7	1.7	3.3	7.5	6.3	3.4	3.3	3.1	5.8	5.5	6.6	4.5	3.8	6.6	5.7	6.7	7.1	4.9	1.9	1.3	100.0
24-Jul	3.0	6.3	6.9	9.1	5.2	1.6	4.1	3.6	5.3	7.7	3.3	3.1	5.8	5.7	4.8	4.6	3.0	3.5	2.7	2.0	2.0	3.3	2.1	1.3	100.0
25-Jul	1.9	8.6	3.8	4.5	4.1	4.0	2.7	1.9	1.1	2.5	6.8	5.2	2.8	5.2	6.0	6.2	5.9	4.5	4.9	5.1	3.8	1.9	3.3	3.3	100.0
26-Jul	4.0	3.2	2.7	3.4	2.3	4.3	5.6	4.9	0.8	2.1	3.8	8.5	8.4	4.4	5.0	4.9	5.0	5.3	4.9	3.7	4.0	1.7	2.3	4.7	99.9
27-Jul	5.4	3.4	3.4	3.2	4.2	4.8	3.5	3.2	3.5	4.6	2.7	3.7	5.1	3.4	12.7	4.5	10.3	3.8	4.3	3.4	0.8	1.1	2.9	2.1	100.0
28-Jul	7.9	5.1	4.6	3.1	2.7	5.3	2.9	3.8	2.7	2.7	2.0	3.7	3.8	3.8	9.3	8.4	7.1	6.0	1.8	2.6	0.7	4.2	3.3	2.2	99.7
29-Jul	2.2	3.7	3.0	3.7	5.1	5.1	3.4	5.3	2.0	4.4	3.3	3.0	3.0	4.0	5.1	7.2	7.3	7.0	6.7	4.7	2.3	1.6	4.2	2.6	99.9
30-Jul	1.7	2.2	2.0	3.4	5.4	4.2	4.2	4.4	1.9	2.7	2.3	3.1	3.7	3.7	3.1	8.1	7.0	9.2	7.9	4.8	3.1	3.7	3.2	4.9	99.9
31-Jul	3.7	4.0	2.6	4.2	5.7	7.0	7.5	6.6	7.2	5.6	3.4	4.4	1.8	2.3	4.4	3.2	3.1	6.4	4.5	3.1	2.7	2.7	1.4	2.4	99.9
01-Aug	2.9	5.4	4.5	2.6	4.8	6.6	4.8	8.0	3.5	4.8	3.8	1.9	2.4	3.5	3.4	3.0	3.7	4.8	6.4	2.2	4.6	3.0	5.3	3.8	99.7
02-Aug	3.6	4.2	3.9	1.5	6.3	4.5	6.0	2.3	2.6	3.3	2.4	5.4	5.7	4.2	5.7	6.5	5.9	3.3	3.9	4.4	2.4	2.3	4.7	5.0	100.0
03-Aug	3.4	3.8	4.2	5.7	4.0	5.1	4.4	4.9	4.0	3.6	4.0	4.2	4.0	5.7	2.7	5.1	5.9	4.9	3.2	5.7	3.2	0.6	2.3	5.3	99.9
04-Aug	5.0	7.7	5.5	5.5	5.9	6.4	4.6	3.2	2.7	2.1	3.2	4.6	3.6	3.9	5.7	3.6	2.5	4.1	2.5	3.2	3.6	3.4	2.1	5.5	100.1
05-Aug	4.1	3.1	2.3	2.7	4.0	2.3	2.2	2.7	2.9	3.3	2.3	6.7	7.0	9.4	8.6	6.0	5.5	4.9	4.8	3.0	4.1	3.0	1.9	3.1	99.9
06-Aug	4.5	4.8	3.9	4.0	5.9	6.5	4.8	3.0	4.2	4.2	2.5	3.1	4.7	6.7	4.0	2.7	2.5	4.3	5.6	5.1	5.0	3.1	3.2	1.9	100.2
07-Aug	4.9	5.9	4.6	4.1	3.4	3.2	4.1	3.9	5.6	2.8	3.9	2.7	5.8	5.6	6.2	4.6	5.2	5.3	4.2	2.9	2.7	2.5	2.1	4.0	100.2
08-Aug	4.4	5.1	4.8	4.2	2.9	3.4	1.7	2.3	2.1	2.0	3.5	2.8	4.4	5.1	6.0	7.3	5.8	6.8	5.7	4.1	2.9	4.4	1.9	3.4	100.0
09-Aug	5.3	4.7	3.9	4.2	5.3	5.6	6.5	2.6	2.9	3.6	5.0	5.0	3.6	4.3	2.9	6.1	3.9	2.5	3.3	3.6	2.9	2.6	1.9	4.8	100.0
10-Aug	4.3	5.6	4.2	4.1	4.6	5.9	5.7	4.0	2.1	3.4	2.7	1.8	4.1	4.0	4.4	3.6	4.4	6.0	4.1	4.1	4.0	3.3	4.3	5.3	100.0
11-Aug	7.6	6.6	3.2	4.2	3.7	4.5	6.3	3.2	2.8	4.7	2.4	1.6	3.9	4.5	4.8	4.3	5.1	3.9	3.9	2.3	2.9	2.4	4.7	6.4	99.9
12-Aug	8.6	8.6	4.8	5.2	3.1	3.3	5.8	4.9	2.2	1.5	2.9	3.1	3.0	2.2	5.9	4.1	3.8	4.1	2.5	3.3	2.8	3.5	5.7	5.3	100.2
Total	3.3	3.0	2.9	3.5	3.5	3.4	3.6	3.3	2.9	3.2	3.0	3.5	4.2	4.6	4.8	4.9	6.0	6.5	6.9	5.8	4.6	4.6	4.4	3.4	99.8

Appendix A.16. Kasilof River south bank sonar counts by hour, 14 June through 12 August 1997. Counts expressed as percentage of daily total.

Date	Counts by Hour																							Daily Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
14-Jun	7.3	10.4	10.4	10.0	11.2	4.2	1.5	1.2	4.2	2.7	30.0	0.8	3.8	1.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.1
15-Jun	1.7	3.6	8.4	12.0	15.9	11.9	3.6	2.6	2.6	2.0	2.3	1.1	1.7	2.7	0.8	0.9	4.4	5.7	2.0	2.4	2.1	1.7	3.9	4.5	100.5
16-Jun	3.3	5.1	8.7	11.0	18.8	13.5	9.3	5.4	4.0	2.8	1.5	1.9	0.6	0.3	0.5	0.6	1.6	2.3	1.5	0.8	1.6	2.0	0.8	2.4	100.3
17-Jun	0.6	3.1	7.5	9.0	16.7	12.5	7.0	5.0	6.1	6.8	4.5	2.2	2.3	2.4	2.1	2.2	3.3	2.3	1.1	0.7	0.3	1.2	0.2	1.0	100.1
18-Jun	3.2	3.8	3.3	6.5	12.5	10.1	4.4	1.4	1.5	3.3	2.6	3.0	2.2	2.8	2.9	4.5	3.6	2.8	3.1	2.1	4.3	5.0	5.4	5.7	100.0
19-Jun	3.4	2.3	3.2	5.8	7.7	14.6	11.0	7.8	5.5	4.2	2.2	3.1	2.3	2.2	5.5	2.8	2.5	2.4	3.0	1.5	1.5	0.9	2.2	2.7	100.3
20-Jun	1.3	1.6	1.8	2.7	5.3	13.1	7.7	3.9	4.2	6.6	6.2	6.1	5.6	5.3	4.0	2.5	1.2	1.3	1.7	1.6	5.5	5.9	2.7	2.4	100.2
21-Jun	1.6	2.2	2.5	3.7	5.3	10.4	14.2	9.0	8.3	9.5	7.3	3.2	3.8	4.1	1.8	2.3	2.4	1.5	1.8	2.6	0.2	0.5	0.4	1.5	100.1
22-Jun	3.0	2.5	4.2	4.3	8.3	11.3	14.8	6.5	6.1	6.4	6.1	2.2	1.9	1.7	2.0	1.4	2.0	1.4	2.4	3.6	3.1	2.3	2.2	0.3	100.0
23-Jun	1.4	2.0	2.6	3.5	5.2	4.3	8.6	11.3	6.1	3.1	4.8	3.7	3.2	2.4	3.5	2.7	2.9	2.3	1.6	2.7	6.2	8.1	4.5	3.2	99.9
24-Jun	1.8	0.8	2.2	2.1	3.3	4.6	6.7	15.0	8.0	4.4	6.4	9.7	7.0	5.5	2.3	2.2	1.8	0.8	1.5	3.3	3.4	2.5	2.1	2.5	99.9
25-Jun	2.2	2.0	2.7	3.7	6.1	6.0	4.8	3.6	9.4	11.1	8.0	8.5	9.6	5.9	2.4	1.6	2.1	1.5	1.0	1.2	1.2	2.7	1.2	1.7	100.2
26-Jun	3.1	2.7	3.1	3.3	5.3	6.0	4.5	6.5	5.5	5.1	11.9	9.2	5.7	4.5	2.5	1.3	0.6	0.6	0.9	1.1	1.9	5.2	5.5	3.8	99.8
27-Jun	4.2	4.6	6.4	5.6	5.5	5.2	5.0	6.7	4.2	3.8	7.2	10.5	6.6	3.0	4.4	3.3	2.9	2.0	2.1	1.1	1.2	1.0	1.2	2.3	100.0
28-Jun	9.7	8.9	3.4	4.6	5.6	4.0	3.8	2.7	3.0	2.1	2.7	4.3	5.6	7.2	3.3	5.2	5.7	5.1	4.1	1.7	1.6	1.5	1.7	2.2	99.7
29-Jun	5.6	4.3	2.6	3.5	5.5	6.1	2.3	1.7	2.5	1.9	3.8	4.9	4.2	6.7	7.6	2.1	2.2	4.0	4.9	5.4	3.3	3.4	4.0	7.2	99.7
30-Jun	6.8	7.2	7.1	4.7	3.9	11.2	8.8	4.8	4.8	3.8	2.9	2.7	2.4	3.0	5.3	5.6	2.3	2.7	1.4	1.7	1.5	1.9	1.9	1.8	100.2
01-Jul	3.3	3.4	3.6	3.6	3.1	2.9	2.0	2.4	1.6	1.6	3.1	3.7	5.3	4.0	3.5	8.3	7.0	4.5	3.5	6.3	7.8	6.3	4.1	5.1	100.0
02-Jul	4.2	5.0	8.0	10.6	7.9	2.9	2.9	5.4	4.0	2.8	2.4	2.3	3.7	4.4	4.0	2.6	5.6	6.3	2.3	2.3	3.8	2.6	1.7	2.3	100.0
03-Jul	4.2	4.1	2.2	4.3	3.1	2.4	2.4	1.6	2.4	2.3	3.3	4.0	4.6	3.8	3.1	4.4	3.7	5.9	14.3	5.8	4.3	4.4	6.4	3.0	100.0
04-Jul	3.9	2.9	3.2	1.7	1.7	6.5	8.6	8.4	6.0	5.9	5.0	2.9	4.5	4.7	5.3	5.1	2.9	2.3	4.0	1.8	1.3	2.6	3.9	5.0	100.1
05-Jul	9.9	7.3	6.2	5.6	5.5	2.4	9.1	7.3	4.1	2.5	2.3	1.3	2.7	2.9	3.5	2.6	2.2	3.3	2.9	7.1	1.9	2.5	1.5	3.3	99.9
06-Jul	5.6	2.1	2.9	3.0	2.7	2.7	3.4	1.9	1.7	3.4	5.3	1.9	1.9	1.6	1.7	4.6	3.0	4.4	4.0	5.6	9.8	12.3	7.1	7.6	100.2
07-Jul	3.2	1.8	2.6	1.0	2.4	2.9	3.8	10.5	7.8	2.6	4.1	3.7	4.6	3.5	3.6	2.7	2.3	2.4	4.0	5.6	12.7	5.9	3.9	2.6	100.2
08-Jul	13.6	5.1	5.6	5.6	4.2	2.2	2.3	3.8	4.8	6.3	6.2	2.7	3.7	3.8	3.0	3.6	1.1	2.1	1.0	2.7	4.2	3.7	4.4	4.2	99.9
09-Jul	1.8	1.2	1.2	0.4	1.2	0.7	0.5	0.4	2.3	3.3	1.7	1.9	2.9	3.5	2.6	3.7	4.6	3.8	4.3	6.7	7.3	19.3	16.2	8.4	99.9
10-Jul	4.4	6.3	6.8	5.7	4.2	6.3	3.4	4.1	4.4	8.1	5.1	5.4	2.4	3.1	3.0	4.0	1.8	2.3	2.9	2.9	3.2	3.0	4.4	2.9	100.1
11-Jul	0.9	1.9	2.3	1.7	1.8	2.3	2.8	4.5	4.4	5.9	9.2	6.9	5.0	5.6	6.9	3.8	5.1	4.9	2.7	5.5	5.3	4.0	3.5	3.1	100.0
12-Jul	3.0	2.2	2.3	1.7	2.1	2.3	3.7	3.5	2.8	2.9	4.8	4.1	9.6	4.6	4.5	4.9	4.5	3.1	2.7	5.5	3.5	4.2	7.5	9.9	99.9
13-Jul	6.5	5.2	3.1	4.8	5.0	2.7	4.6	5.2	4.9	6.0	3.4	3.8	5.1	4.7	4.6	4.7	4.6	3.2	2.6	5.3	2.9	1.7	2.6	2.8	100.0

-Continued-

Appendix A.16. (p.2 of 2)

Date	Counts by Hour																							Daily Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
14-Jul	12.3	11.5	10.3	6.7	6.8	5.1	5.4	4.8	4.3	1.6	2.0	1.2	1.3	1.5	1.4	2.0	2.3	2.2	3.0	3.3	2.7	2.6	3.4	2.3	100.0
15-Jul	3.4	2.7	1.8	2.9	2.7	1.4	3.2	2.2	1.6	1.7	3.9	4.2	2.0	1.5	2.0	6.8	12.3	7.7	5.1	4.9	3.5	6.7	6.1	9.5	99.8
16-Jul	2.9	4.4	4.1	6.7	7.4	7.8	5.8	5.8	4.2	3.9	3.6	2.4	2.4	2.6	2.8	2.3	4.7	2.4	3.3	3.2	3.5	4.9	4.9	4.0	100.0
17-Jul	2.0	2.8	4.4	6.7	5.9	2.3	1.8	3.3	1.9	3.3	3.6	3.0	3.3	1.8	1.9	1.9	8.2	7.2	6.6	2.0	8.2	6.7	4.8	6.0	99.6
18-Jul	16.0	5.6	7.5	5.9	7.3	10.2	3.6	3.7	3.4	2.7	2.4	1.6	1.8	1.8	4.4	1.6	2.9	2.3	3.1	1.8	3.3	2.7	2.8	1.9	100.3
19-Jul	2.3	2.9	1.9	3.0	2.3	3.2	2.3	3.0	2.8	3.8	3.0	3.2	1.7	1.8	3.9	1.8	1.8	2.5	6.7	4.4	5.9	11.5	13.7	10.4	99.8
20-Jul	6.8	4.6	5.8	4.1	4.3	8.0	9.5	4.0	4.5	6.4	8.9	3.0	3.6	1.3	1.4	3.0	1.3	1.8	2.4	3.3	1.1	1.6	5.0	4.5	100.2
21-Jul	3.5	3.1	2.6	3.5	3.9	4.6	7.2	12.0	5.5	6.3	4.4	3.5	3.7	2.6	2.6	1.5	4.4	2.0	1.1	5.5	6.1	4.8	2.8	2.6	99.8
22-Jul	1.4	1.1	0.4	1.3	1.4	2.4	4.2	6.9	2.7	4.7	7.5	8.2	4.9	4.3	3.3	3.9	1.9	3.8	4.5	7.7	7.0	4.3	5.0	7.3	100.1
23-Jul	1.9	1.4	0.8	0.8	1.8	1.4	2.3	8.9	11.7	3.5	2.3	8.8	9.8	5.6	2.8	2.3	1.7	2.6	4.0	5.3	11.4	6.4	1.4	1.0	99.9
24-Jul	5.1	6.1	4.4	1.7	2.1	4.2	3.2	3.4	4.6	5.8	2.6	3.7	3.5	5.3	4.2	4.8	3.1	3.6	3.7	4.3	2.8	7.0	5.9	4.9	100.0
25-Jul	4.6	4.5	2.9	3.7	3.2	6.5	4.0	3.4	2.8	4.5	11.1	5.3	4.9	3.1	5.3	2.9	1.4	3.2	3.9	1.4	3.0	5.1	4.3	5.0	100.0
26-Jul	3.5	2.9	2.9	2.7	3.9	4.4	3.6	3.7	3.5	4.1	2.6	8.7	9.2	5.1	5.1	5.1	3.8	2.4	3.1	2.1	2.1	5.2	3.3	6.9	99.9
27-Jul	3.4	3.2	2.9	3.4	4.9	6.5	5.6	4.9	4.3	2.9	4.9	1.5	4.7	4.4	2.9	6.0	5.1	4.8	4.0	3.9	3.2	3.2	4.5	4.8	99.9
28-Jul	1.9	4.4	3.8	3.0	3.9	6.1	7.1	5.4	4.1	1.2	4.2	2.0	1.7	2.5	3.1	8.1	9.4	7.0	5.8	4.6	3.1	2.3	3.0	1.9	99.6
29-Jul	3.0	4.4	4.7	5.3	5.9	5.6	5.5	4.1	3.7	4.7	3.2	2.9	2.2	2.2	1.4	4.9	13.0	5.6	2.2	2.8	4.2	2.7	2.7	3.0	99.9
30-Jul	2.7	1.5	2.7	3.2	4.3	3.4	3.5	4.1	4.7	4.1	4.2	2.6	4.4	2.7	2.1	4.0	3.6	9.7	7.5	6.6	5.0	4.8	4.6	3.9	99.9
31-Jul	2.1	3.1	2.8	1.6	5.6	6.8	5.9	5.7	5.3	4.3	4.5	5.2	3.6	3.2	1.7	3.7	3.7	4.1	5.4	3.4	5.9	5.9	3.9	2.6	100.0
01-Aug	2.0	2.4	2.5	3.5	4.5	5.9	5.3	4.2	3.7	4.7	4.2	2.9	2.6	3.5	3.8	3.7	3.8	3.7	6.4	4.7	3.8	5.4	7.2	5.6	100.0
02-Aug	4.8	3.0	1.4	2.5	3.0	2.6	8.8	6.4	7.0	5.6	7.6	5.8	2.2	1.9	2.2	3.9	2.5	1.8	3.8	5.7	6.5	3.2	4.0	3.8	100.0
03-Aug	2.5	2.6	2.5	2.3	2.9	4.5	9.5	8.3	8.9	5.3	4.6	3.7	3.9	3.5	3.7	2.2	3.5	2.4	2.4	2.9	4.1	4.6	4.3	5.0	100.1
04-Aug	3.9	2.2	2.5	3.0	3.8	3.9	6.7	8.5	7.3	3.1	7.2	8.9	3.5	2.5	1.9	3.7	2.6	2.9	1.1	2.3	6.9	3.6	3.9	4.1	100.0
05-Aug	1.8	1.3	1.2	1.3	1.4	2.6	1.9	4.6	9.5	5.0	5.3	6.4	6.7	4.8	3.0	4.3	4.1	4.8	6.2	5.3	6.3	5.0	2.8	4.2	99.8
06-Aug	2.8	2.5	2.3	1.8	2.6	5.2	5.8	5.9	7.2	5.9	3.7	4.1	5.3	4.4	5.7	4.5	5.3	3.7	5.3	3.8	3.6	4.7	2.0	1.9	100.0
07-Aug	2.2	2.8	2.2	1.9	2.3	3.4	6.7	4.7	4.2	6.1	6.3	8.2	4.1	2.8	4.6	4.6	4.3	4.4	4.4	3.3	3.3	5.7	4.0	3.4	99.9
08-Aug	2.5	1.8	2.0	1.8	3.1	4.5	5.0	5.1	6.2	4.3	6.2	7.8	5.2	4.3	5.4	2.8	5.6	6.2	4.1	3.3	3.1	3.5	3.6	2.7	100.1
09-Aug	2.7	2.4	2.8	2.5	3.0	4.4	7.2	7.6	4.7	4.7	5.7	4.7	5.1	5.5	4.1	5.1	3.3	4.1	3.5	3.4	2.4	3.7	4.1	3.2	99.9
10-Aug	3.4	2.3	2.6	2.0	2.7	3.4	5.8	4.8	5.3	3.3	4.0	4.6	8.2	3.7	4.7	5.7	6.2	1.2	3.8	6.0	4.4	3.5	3.7	4.3	99.6
11-Aug	2.3	1.5	1.5	1.3	2.1	3.6	4.7	5.2	3.5	3.6	4.5	4.8	5.1	5.4	7.5	6.9	5.0	5.5	6.1	5.0	4.2	3.9	3.2	3.5	99.9
12-Aug	5.6	4.3	3.3	2.9	3.8	5.7	1.7	1.4	8.4	3.6	4.1	3.1	3.1	2.8	3.9	5.0	5.3	6.1	6.8	0.9	0.9	8.9	4.6	3.8	100.0
Total	3.5	3.3	3.5	3.7	4.6	5.6	5.6	5.5	5.2	4.6	5.3	5.1	4.7	3.9	3.8	3.6	3.7	3.4	3.5	3.3	3.7	4.1	3.5	3.5	100.2

Appendix A.17. Kasilof River north bank sonar counts by sector, 14 June through 12 August 1997.

	Counts by Sector													
Date	1	2	3	4	5	6	7	8	9	10	11	12	Daily Total	Cum Total
14-Jun	2	5	3	1	1	0	0	4	0	21	11	28	76	76
15-Jun	2	0	0	0	0	0	0	0	0	0	0	0	2	78
16-Jun	0	2	1	0	0	0	0	0	0	0	0	3	6	84
17-Jun	96	103	218	209	138	108	80	82	109	152	142	135	1,572	1,656
18-Jun	22	292	820	596	104	36	3	1	5	79	177	182	2,317	3,973
19-Jun	53	670	1,727	823	71	49	2	8	31	71	109	196	3,810	7,783
20-Jun	27	487	1,931	1,380	124	33	1	5	14	95	224	242	4,563	12,346
21-Jun	26	258	790	534	121	49	3	10	31	111	281	264	2,478	14,824
22-Jun	30	188	453	241	28	20	4	3	36	95	213	198	1,509	16,333
23-Jun	25	271	671	255	36	32	3	10	35	104	192	188	1,822	18,155
24-Jun	148	1,301	1,723	412	26	13	2	4	16	44	129	137	3,955	22,110
25-Jun	315	2,583	1,973	280	17	7	0	5	17	34	140	120	5,491	27,601
26-Jun	228	1,703	1,327	191	19	6	1	7	48	134	330	475	4,469	32,070
27-Jun	310	2,050	1,333	234	25	23	2	12	45	154	474	627	5,289	37,359
28-Jun	88	484	266	45	24	8	1	2	25	94	335	466	1,838	39,197
29-Jun	108	777	328	35	277	10	1	3	23	87	284	507	2,440	41,637
30-Jun	133	787	390	54	133	9	2	10	39	150	261	503	2,471	44,108
01-Jul	96	429	660	392	153	36	56	53	52	74	107	197	2,305	46,413
02-Jul	919	2,371	1,867	741	283	52	96	78	59	93	92	111	6,762	53,175
03-Jul	126	571	404	167	77	42	41	55	20	51	47	37	1,638	54,813
04-Jul	1,968	4,168	1,039	265	77	39	40	76	61	78	84	56	7,951	62,764
05-Jul	126	235	111	31	13	1	14	28	32	22	25	22	660	63,424
06-Jul	230	192	69	14	7	8	11	10	29	16	11	19	616	64,040
07-Jul	912	828	267	53	11	7	12	24	52	36	29	56	2,287	66,327
08-Jul	112	129	32	8	5	5	3	9	17	32	17	23	392	66,719
09-Jul	209	263	77	16	6	3	13	15	30	49	14	16	711	67,430
10-Jul	449	270	97	17	9	6	14	14	48	50	26	31	1,031	68,461
11-Jul	934	465	95	19	15	12	19	13	37	37	33	23	1,702	70,163
12-Jul	877	412	77	22	11	6	20	10	61	68	33	53	1,650	71,813
13-Jul	800	333	48	4	7	13	19	19	46	64	29	35	1,417	73,230
14-Jul	213	100	10	3	3	5	8	13	25	67	41	35	523	73,753
15-Jul	211	71	11	6	2	6	6	17	26	62	36	42	496	74,249
16-Jul	246	116	9	5	3	6	8	15	28	70	29	45	580	74,829
17-Jul	3,615	482	55	6	2	4	4	10	30	38	52	43	4,341	79,170
18-Jul	1,023	278	8	1	0	1	2	5	13	38	56	52	1,477	80,647
19-Jul	608	387	87	7	0	1	0	8	2	13	13	40	1,166	81,813
20-Jul	490	401	125	12	1	0	0	0	0	0	0	2	1,031	82,844
21-Jul	317	251	50	6	0	0	0	1	0	0	0	1	626	83,470
22-Jul	533	238	22	4	1	0	0	0	0	2	0	0	800	84,270
23-Jul	2,335	309	25	0	0	0	0	0	0	9	3	11	2,692	86,962

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Appendix A.17. (p. 2 of 2)

	Counts by Sector													
Date	1	2	3	4	5	6	7	8	9	10	11	12	Daily Total	Cum Total
24-Jul	1,604	312	3	4	0	0	0	0	0	10	13	17	1,963	88,925
25-Jul	781	122	3	3	7	7	0	4	0	11	15	19	972	89,897
26-Jul	445	151	6	4	4	5	0	1	0	21	7	11	655	90,552
27-Jul	432	122	10	1	0	0	0	0	1	35	5	18	624	91,176
28-Jul	396	110	3	1	9	0	0	0	0	24	0	4	547	91,723
29-Jul	484	111	11	0	0	2	1	0	1	28	2	2	642	92,365
30-Jul	821	321	53	27	27	27	0	0	0	0	0	1	1,277	93,642
31-Jul	661	233	35	8	8	7	0	1	0	1	0	0	954	94,596
01-Aug	367	234	21	2	0	0	0	0	0	0	0	0	624	95,220
02-Aug	376	255	32	1	0	0	0	0	0	0	0	0	664	95,884
03-Aug	312	141	17	0	0	1	0	0	0	0	0	2	473	96,357
04-Aug	252	158	23	1	0	1	4	0	0	0	0	0	439	96,796
05-Aug	478	230	21	0	1	2	0	0	0	0	0	0	732	97,528
06-Aug	881	357	24	1	0	0	0	0	0	0	0	0	1,263	98,791
07-Aug	1,220	508	42	2	0	0	0	0	0	0	0	0	1,772	100,563
08-Aug	1,500	558	57	2	0	0	0	0	0	0	0	0	2,117	102,680
09-Aug	1,007	391	24	3	1	1	0	0	0	0	0	0	1,427	104,107
10-Aug	845	337	22	2	0	1	0	0	0	0	0	0	1,207	105,314
11-Aug	1,091	301	54	0	2	0	0	0	0	0	0	1	1,449	106,763
12-Aug	918	252	24	2	1	0	0	0	2	0	0	0	1,199	107,962
Total	33,833	30,464	19,684	7,153	1,890	710	496	645	1,146	2,524	4,121	5,296	107,962	

FN: 97KA1SC.XLS

Appendix A.18. Kasilof River south bank sonar counts by sector, 14 June through 12 August 1997.

	Counts by Sector													
Date	1	2	3	4	5	6	7	8	9	10	11	12	Daily Total	Cum Total
14-Jun	10	12	52	16	5	15	30	15	17	25	22	41	260	260
15-Jun	9	11	6	33	13	36	54	143	81	44	88	148	666	926
16-Jun	18	10	8	23	11	61	75	137	167	91	119	164	884	1,810
17-Jun	3	12	15	43	73	211	225	287	265	235	271	426	2,066	3,876
18-Jun	4	12	21	31	22	135	112	200	121	104	138	211	1,111	4,987
19-Jun	7	29	45	103	83	266	231	305	195	168	182	239	1,853	6,840
20-Jun	22	45	134	336	269	1,062	873	883	460	357	475	485	5,401	12,241
21-Jun	5	59	263	414	327	1,073	512	607	189	272	337	547	4,605	16,846
22-Jun	21	68	169	147	166	651	499	425	230	112	176	216	2,880	19,726
23-Jun	11	31	66	93	120	584	425	560	84	96	137	229	2,436	22,162
24-Jun	15	45	98	129	185	880	529	611	109	141	224	211	3,177	25,339
25-Jun	26	105	184	293	398	1,461	823	959	317	382	414	484	5,846	31,185
26-Jun	60	240	401	432	524	2,160	1,496	1,174	402	462	684	522	8,557	39,742
27-Jun	129	366	451	407	331	1,103	765	791	501	659	629	686	6,818	46,560
28-Jun	52	65	70	70	77	235	247	306	202	400	434	369	2,527	49,087
29-Jun	58	69	269	164	105	210	210	299	283	577	664	751	3,659	52,746
30-Jun	60	255	414	187	197	306	572	413	647	1,025	869	1,010	5,955	58,701
01-Jul	15	70	119	184	183	299	299	345	402	464	315	337	3,032	61,733
02-Jul	26	114	165	331	284	443	539	548	433	727	363	350	4,323	66,056
03-Jul	17	43	84	107	117	178	205	271	181	436	307	265	2,211	68,267
04-Jul	25	142	281	367	307	414	435	484	292	614	386	305	4,052	72,319
05-Jul	36	96	123	160	171	150	169	142	59	152	123	118	1,499	73,818
06-Jul	44	41	37	56	45	64	83	75	38	85	58	75	701	74,519
07-Jul	123	244	238	252	283	157	229	229	125	239	163	155	2,437	76,956
08-Jul	47	73	47	84	63	58	71	57	29	71	66	64	730	77,686
09-Jul	141	220	177	171	135	93	69	108	46	81	64	57	1,362	79,048
10-Jul	173	214	188	209	215	102	95	127	56	142	97	58	1,676	80,724
11-Jul	705	576	247	211	205	78	78	84	37	113	81	76	2,491	83,215
12-Jul	345	378	390	236	134	103	141	119	84	195	204	155	2,484	85,699
13-Jul	503	537	850	678	241	119	112	95	77	136	179	190	3,717	89,416
14-Jul	84	124	192	266	130	64	45	54	36	78	63	140	1,276	90,692
15-Jul	209	246	298	151	53	34	28	31	25	52	46	77	1,250	91,942
16-Jul	440	942	752	346	80	50	29	24	29	58	56	73	2,879	94,821
17-Jul	271	898	710	722	170	124	114	79	56	73	102	126	3,445	98,266
18-Jul	125	176	161	174	38	44	44	31	17	42	51	107	1,010	99,276
19-Jul	181	242	79	112	51	11	23	8	14	23	30	50	824	100,100
20-Jul	128	169	89	164	54	28	14	21	8	27	30	67	799	100,899
21-Jul	100	78	53	90	13	13	13	13	13	9	19	43	457	101,356
22-Jul	177	292	174	174	83	26	14	16	10	16	15	95	1,092	102,448
23-Jul	592	978	612	192	60	25	18	28	16	21	33	46	2,621	105,069

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Appendix A.18. (p. 2 of 2)

	Counts by Sector													
Date	1	2	3	4	5	6	7	8	9	10	11	12	Daily Total	Cum Total
24-Jul	289	513	385	181	68	32	43	29	16	25	33	22	1,636	106,705
25-Jul	244	296	264	174	51	32	60	42	26	36	44	25	1,294	107,999
26-Jul	190	230	300	169	58	27	34	23	26	18	20	51	1,146	109,145
27-Jul	310	217	309	127	54	45	21	18	8	17	14	52	1,192	110,337
28-Jul	1,012	453	157	123	44	22	41	22	22	14	18	76	2,004	112,341
29-Jul	675	464	136	41	11	8	23	16	6	13	18	45	1,456	113,797
30-Jul	757	780	249	50	22	10	15	24	7	13	14	21	1,962	115,759
31-Jul	647	611	220	31	11	2	10	13	9	18	11	19	1,602	117,361
01-Aug	547	623	225	44	12	12	5	10	13	2	5	10	1,508	118,869
02-Aug	692	826	327	42	13	10	4	5	9	11	8	12	1,959	120,828
03-Aug	825	630	189	26	13	6	2	8	2	1	4	8	1,714	122,542
04-Aug	596	574	185	56	14	10	6	6	6	7	7	6	1,473	124,015
05-Aug	2,189	767	118	13	6	1	0	8	7	11	17	7	3,144	127,159
06-Aug	3,672	696	67	19	8	7	2	15	13	0	6	2	4,507	131,666
07-Aug	3,633	965	77	13	4	4	1	4	2	3	4	8	4,718	136,384
08-Aug	4,223	973	109	29	7	5	0	0	2	5	9	19	5,381	141,765
09-Aug	3,281	566	61	15	8	6	1	4	4	4	10	10	3,970	145,735
10-Aug	2,755	467	33	23	6	1	1	5	2	1	6	11	3,311	149,046
11-Aug	4,035	358	30	13	9	4	5	9	5	2	4	3	4,477	153,523
12-Aug	2,747	248	22	9	0	0	0	3	1	1	1	3	3,035	156,558
Total	38,336	19,584	12,195	9,556	6,440	13,370	10,819	11,368	6,539	9,206	8,967	10,178	156,558	

FN: 97KA2SC.XLS

Appendix A.19. Kasilof River north bank sonar counts by sector, 14 June through 12 August 1997. Counts expressed as percentage of daily total.

	Counts by Sector												
Date	1	2	3	4	5	6	7	8	9	10	11	12	Daily Total
14-Jun	2.6	6.6	3.9	1.3	1.3	0.0	0.0	5.3	0.0	27.6	14.5	36.8	99.9
15-Jun	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
16-Jun	0.0	33.3	16.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	100.0
17-Jun	6.1	6.6	13.9	13.3	8.8	6.9	5.1	5.2	6.9	9.7	9.0	8.6	100.1
18-Jun	0.9	12.6	35.4	25.7	4.5	1.6	0.1	0.0	0.2	3.4	7.6	7.9	99.9
19-Jun	1.4	17.6	45.3	21.6	1.9	1.3	0.1	0.2	0.8	1.9	2.9	5.1	100.1
20-Jun	0.6	10.7	42.3	30.2	2.7	0.7	0.0	0.1	0.3	2.1	4.9	5.3	99.9
21-Jun	1.0	10.4	31.9	21.5	4.9	2.0	0.1	0.4	1.3	4.5	11.3	10.7	100.0
22-Jun	2.0	12.5	30.0	16.0	1.9	1.3	0.3	0.2	2.4	6.3	14.1	13.1	100.1
23-Jun	1.4	14.9	36.8	14.0	2.0	1.8	0.2	0.5	1.9	5.7	10.5	10.3	100.0
24-Jun	3.7	32.9	43.6	10.4	0.7	0.3	0.1	0.1	0.4	1.1	3.3	3.5	100.1
25-Jun	5.7	47.0	35.9	5.1	0.3	0.1	0.0	0.1	0.3	0.6	2.5	2.2	99.8
26-Jun	5.1	38.1	29.7	4.3	0.4	0.1	0.0	0.2	1.1	3.0	7.4	10.6	100.0
27-Jun	5.9	38.8	25.2	4.4	0.5	0.4	0.0	0.2	0.9	2.9	9.0	11.9	100.1
28-Jun	4.8	26.3	14.5	2.4	1.3	0.4	0.1	0.1	1.4	5.1	18.2	25.4	100.0
29-Jun	4.4	31.8	13.4	1.4	11.4	0.4	0.0	0.1	0.9	3.6	11.6	20.8	99.8
30-Jun	5.4	31.8	15.8	2.2	5.4	0.4	0.1	0.4	1.6	6.1	10.6	20.4	100.2
01-Jul	4.2	18.6	28.6	17.0	6.6	1.6	2.4	2.3	2.3	3.2	4.6	8.5	99.9
02-Jul	13.6	35.1	27.6	11.0	4.2	0.8	1.4	1.2	0.9	1.4	1.4	1.6	100.2
03-Jul	7.7	34.9	24.7	10.2	4.7	2.6	2.5	3.4	1.2	3.1	2.9	2.3	100.2
04-Jul	24.8	52.4	13.1	3.3	1.0	0.5	0.5	1.0	0.8	1.0	1.1	0.7	100.2
05-Jul	19.1	35.6	16.8	4.7	2.0	0.2	2.1	4.2	4.8	3.3	3.8	3.3	99.9
06-Jul	37.3	31.2	11.2	2.3	1.1	1.3	1.8	1.6	4.7	2.6	1.8	3.1	100.0
07-Jul	39.9	36.2	11.7	2.3	0.5	0.3	0.5	1.0	2.3	1.6	1.3	2.4	100.0
08-Jul	28.6	32.9	8.2	2.0	1.3	1.3	0.8	2.3	4.3	8.2	4.3	5.9	100.1
09-Jul	29.4	37.0	10.8	2.3	0.8	0.4	1.8	2.1	4.2	6.9	2.0	2.3	100.0
10-Jul	43.5	26.2	9.4	1.6	0.9	0.6	1.4	1.4	4.7	4.8	2.5	3.0	100.0
11-Jul	54.9	27.3	5.6	1.1	0.9	0.7	1.1	0.8	2.2	2.2	1.9	1.4	100.1
12-Jul	53.2	25.0	4.7	1.3	0.7	0.4	1.2	0.6	3.7	4.1	2.0	3.2	100.1
13-Jul	56.5	23.5	3.4	0.3	0.5	0.9	1.3	1.3	3.2	4.5	2.0	2.5	99.9
14-Jul	40.7	19.1	1.9	0.6	0.6	1.0	1.5	2.5	4.8	12.8	7.8	6.7	100.0
15-Jul	42.5	14.3	2.2	1.2	0.4	1.2	1.2	3.4	5.2	12.5	7.3	8.5	99.9
16-Jul	42.4	20.0	1.6	0.9	0.5	1.0	1.4	2.6	4.8	12.1	5.0	7.8	100.1
17-Jul	83.3	11.1	1.3	0.1	0.0	0.1	0.1	0.2	0.7	0.9	1.2	1.0	100.0
18-Jul	69.3	18.8	0.5	0.1	0.0	0.1	0.1	0.3	0.9	2.6	3.8	3.5	100.0
19-Jul	52.1	33.2	7.5	0.6	0.0	0.1	0.0	0.7	0.2	1.1	1.1	3.4	100.0
20-Jul	47.5	38.9	12.1	1.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	100.0
21-Jul	50.6	40.1	8.0	1.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.2	100.1
22-Jul	66.6	29.8	2.8	0.5	0.1	0.0	0.0	0.0	0.0	0.3	0.0	0.0	100.1
23-Jul	86.7	11.5	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.4	99.9

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Appendix A.19. (p. 2 of 2)

Date	Counts by Sector												Daily Total
	1	2	3	4	5	6	7	8	9	10	11	12	
24-Jul	81.7	15.9	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.5	0.7	0.9	100.1
25-Jul	80.3	12.6	0.3	0.3	0.7	0.7	0.0	0.4	0.0	1.1	1.5	2.0	99.9
26-Jul	67.9	23.1	0.9	0.6	0.6	0.8	0.0	0.2	0.0	3.2	1.1	1.7	100.1
27-Jul	69.2	19.6	1.6	0.2	0.0	0.0	0.0	0.0	0.2	5.6	0.8	2.9	100.1
28-Jul	72.4	20.1	0.5	0.2	1.6	0.0	0.0	0.0	0.0	4.4	0.0	0.7	99.9
29-Jul	75.4	17.3	1.7	0.0	0.0	0.3	0.2	0.0	0.2	4.4	0.3	0.3	100.1
30-Jul	64.3	25.1	4.2	2.1	2.1	2.1	0.0	0.0	0.0	0.0	0.0	0.1	100.0
31-Jul	69.3	24.4	3.7	0.8	0.8	0.7	0.0	0.1	0.0	0.1	0.0	0.0	99.9
01-Aug	58.8	37.5	3.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
02-Aug	56.6	38.4	4.8	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
03-Aug	66.0	29.8	3.6	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.4	100.0
04-Aug	57.4	36.0	5.2	0.2	0.0	0.2	0.9	0.0	0.0	0.0	0.0	0.0	99.9
05-Aug	65.3	31.4	2.9	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	100.0
06-Aug	69.8	28.3	1.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.1
07-Aug	68.8	28.7	2.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
08-Aug	70.9	26.4	2.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.1
09-Aug	70.6	27.4	1.7	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	100.1
10-Aug	70.0	27.9	1.8	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	100.0
11-Aug	75.3	20.8	3.7	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	100.0
12-Aug	76.6	21.0	2.0	0.2	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.0	100.1
Total	31.3	28.2	18.2	6.6	1.8	0.7	0.5	0.6	1.1	2.3	3.8	4.9	100.0

FN: 97KA1SP.XLS

Appendix A.20. Kasilof River south bank sonar counts by sector, 14 June through 12 August 1997. Counts expressed as percentage of daily total.

	Counts by Sector												
Date	1	2	3	4	5	6	7	8	9	10	11	12	Daily Total
14-Jun	3.8	4.6	20.0	6.2	1.9	5.8	11.5	5.8	6.5	9.6	8.5	15.8	100.0
15-Jun	1.4	1.7	0.9	5.0	2.0	5.4	8.1	21.5	12.2	6.6	13.2	22.2	100.2
16-Jun	2.0	1.1	0.9	2.6	1.2	6.9	8.5	15.5	18.9	10.3	13.5	18.6	100.0
17-Jun	0.1	0.6	0.7	2.1	3.5	10.2	10.9	13.9	12.8	11.4	13.1	20.6	99.9
18-Jun	0.4	1.1	1.9	2.8	2.0	12.2	10.1	18.0	10.9	9.4	12.4	19.0	100.2
19-Jun	0.4	1.6	2.4	5.6	4.5	14.4	12.5	16.5	10.5	9.1	9.8	12.9	100.2
20-Jun	0.4	0.8	2.5	6.2	5.0	19.7	16.2	16.3	8.5	6.6	8.8	9.0	100.0
21-Jun	0.1	1.3	5.7	9.0	7.1	23.3	11.1	13.2	4.1	5.9	7.3	11.9	100.0
22-Jun	0.7	2.4	5.9	5.1	5.8	22.6	17.3	14.8	8.0	3.9	6.1	7.5	100.1
23-Jun	0.5	1.3	2.7	3.8	4.9	24.0	17.4	23.0	3.4	3.9	5.6	9.4	99.9
24-Jun	0.5	1.4	3.1	4.1	5.8	27.7	16.7	19.2	3.4	4.4	7.1	6.6	100.0
25-Jun	0.4	1.8	3.1	5.0	6.8	25.0	14.1	16.4	5.4	6.5	7.1	8.3	99.9
26-Jun	0.7	2.8	4.7	5.0	6.1	25.2	17.5	13.7	4.7	5.4	8.0	6.1	99.9
27-Jun	1.9	5.4	6.6	6.0	4.9	16.2	11.2	11.6	7.3	9.7	9.2	10.1	100.1
28-Jun	2.1	2.6	2.8	2.8	3.0	9.3	9.8	12.1	8.0	15.8	17.2	14.6	100.1
29-Jun	1.6	1.9	7.4	4.5	2.9	5.7	5.7	8.2	7.7	15.8	18.1	20.5	100.0
30-Jun	1.0	4.3	7.0	3.1	3.3	5.1	9.6	6.9	10.9	17.2	14.6	17.0	100.0
01-Jul	0.5	2.3	3.9	6.1	6.0	9.9	9.9	11.4	13.3	15.3	10.4	11.1	100.1
02-Jul	0.6	2.6	3.8	7.7	6.6	10.2	12.5	12.7	10.0	16.8	8.4	8.1	100.0
03-Jul	0.8	1.9	3.8	4.8	5.3	8.1	9.3	12.3	8.2	19.7	13.9	12.0	100.1
04-Jul	0.6	3.5	6.9	9.1	7.6	10.2	10.7	11.9	7.2	15.2	9.5	7.5	99.9
05-Jul	2.4	6.4	8.2	10.7	11.4	10.0	11.3	9.5	3.9	10.1	8.2	7.9	100.0
06-Jul	6.3	5.8	5.3	8.0	6.4	9.1	11.8	10.7	5.4	12.1	8.3	10.7	99.9
07-Jul	5.0	10.0	9.8	10.3	11.6	6.4	9.4	9.4	5.1	9.8	6.7	6.4	99.9
08-Jul	6.4	10.0	6.4	11.5	8.6	7.9	9.7	7.8	4.0	9.7	9.0	8.8	99.8
09-Jul	10.4	16.2	13.0	12.6	9.9	6.8	5.1	7.9	3.4	5.9	4.7	4.2	100.1
10-Jul	10.3	12.8	11.2	12.5	12.8	6.1	5.7	7.6	3.3	8.5	5.8	3.5	100.1
11-Jul	28.3	23.1	9.9	8.5	8.2	3.1	3.1	3.4	1.5	4.5	3.3	3.1	100.0
12-Jul	13.9	15.2	15.7	9.5	5.4	4.1	5.7	4.8	3.4	7.9	8.2	6.2	100.0
13-Jul	13.5	14.4	22.9	18.2	6.5	3.2	3.0	2.6	2.1	3.7	4.8	5.1	100.0
14-Jul	6.6	9.7	15.0	20.8	10.2	5.0	3.5	4.2	2.8	6.1	4.9	11.0	99.8
15-Jul	16.7	19.7	23.8	12.1	4.2	2.7	2.2	2.5	2.0	4.2	3.7	6.2	100.0
16-Jul	15.3	32.7	26.1	12.0	2.8	1.7	1.0	0.8	1.0	2.0	1.9	2.5	99.8
17-Jul	7.9	26.1	20.6	21.0	4.9	3.6	3.3	2.3	1.6	2.1	3.0	3.7	100.1
18-Jul	12.4	17.4	15.9	17.2	3.8	4.4	4.4	3.1	1.7	4.2	5.0	10.6	100.1
19-Jul	22.0	29.4	9.6	13.6	6.2	1.3	2.8	1.0	1.7	2.8	3.6	6.1	100.1
20-Jul	16.0	21.2	11.1	20.5	6.8	3.5	1.8	2.6	1.0	3.4	3.8	8.4	100.1
21-Jul	21.9	17.1	11.6	19.7	2.8	2.8	2.8	2.8	2.8	2.0	4.2	9.4	99.9
22-Jul	16.2	26.7	15.9	15.9	7.6	2.4	1.3	1.5	0.9	1.5	1.4	8.7	100.0
23-Jul	22.6	37.3	23.3	7.3	2.3	1.0	0.7	1.1	0.6	0.8	1.3	1.8	100.1

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Appendix A.20. (p. 2 of 2)

Date	Counts by Sector												Daily Total
	1	2	3	4	5	6	7	8	9	10	11	12	
24-Jul	17.7	31.4	23.5	11.1	4.2	2.0	2.6	1.8	1.0	1.5	2.0	1.3	100.1
25-Jul	18.9	22.9	20.4	13.4	3.9	2.5	4.6	3.2	2.0	2.8	3.4	1.9	99.9
26-Jul	16.6	20.1	26.2	14.7	5.1	2.4	3.0	2.0	2.3	1.6	1.7	4.5	100.2
27-Jul	26.0	18.2	25.9	10.7	4.5	3.8	1.8	1.5	0.7	1.4	1.2	4.4	100.1
28-Jul	50.5	22.6	7.8	6.1	2.2	1.1	2.0	1.1	1.1	0.7	0.9	3.8	99.9
29-Jul	46.4	31.9	9.3	2.8	0.8	0.5	1.6	1.1	0.4	0.9	1.2	3.1	100.0
30-Jul	38.6	39.8	12.7	2.5	1.1	0.5	0.8	1.2	0.4	0.7	0.7	1.1	100.1
31-Jul	40.4	38.1	13.7	1.9	0.7	0.1	0.6	0.8	0.6	1.1	0.7	1.2	99.9
01-Aug	36.3	41.3	14.9	2.9	0.8	0.8	0.3	0.7	0.9	0.1	0.3	0.7	100.0
02-Aug	35.3	42.2	16.7	2.1	0.7	0.5	0.2	0.3	0.5	0.6	0.4	0.6	100.1
03-Aug	48.1	36.8	11.0	1.5	0.8	0.4	0.1	0.5	0.1	0.1	0.2	0.5	100.1
04-Aug	40.5	39.0	12.6	3.8	1.0	0.7	0.4	0.4	0.4	0.5	0.5	0.4	100.2
05-Aug	69.6	24.4	3.8	0.4	0.2	0.0	0.0	0.3	0.2	0.3	0.5	0.2	99.9
06-Aug	81.5	15.4	1.5	0.4	0.2	0.2	0.0	0.3	0.3	0.0	0.1	0.0	99.9
07-Aug	77.0	20.5	1.6	0.3	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.2	100.1
08-Aug	78.5	18.1	2.0	0.5	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.4	100.0
09-Aug	82.6	14.3	1.5	0.4	0.2	0.2	0.0	0.1	0.1	0.1	0.3	0.3	100.1
10-Aug	83.2	14.1	1.0	0.7	0.2	0.0	0.0	0.2	0.1	0.0	0.2	0.3	100.0
11-Aug	90.1	8.0	0.7	0.3	0.2	0.1	0.1	0.2	0.1	0.0	0.1	0.1	100.0
12-Aug	90.5	8.2	0.7	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	99.9
Total	24.5	12.5	7.8	6.1	4.1	8.5	6.9	7.3	4.2	5.9	5.7	6.5	100.0

FN: 97KA2SP.XLS

Appendix A.21. Estimated salmon escapement adjacent to the north bank of the Crescent River, 24 June through 5 August 1997. Species composition of daily sonar counts based on fish wheel catches.[a]

	Sockeye		Pink		Chum		Coho		Dolly Varden	
Date	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
24-Jun	168	168	4	4	0	0	0	0	2	2
25-Jun	490	658	12	16	0	0	0	0	6	8
26-Jun	313	971	7	23	0	0	0	0	4	12
27-Jun	414	1,385	10	33	0	0	0	0	5	17
28-Jun	432	1,817	10	43	0	0	0	0	5	22
29-Jun	604	2,421	15	58	0	0	0	0	7	29
30-Jun	253	2,674	6	64	0	0	0	0	3	32
01-Jul	421	3,095	17	81	0	0	0	0	10	42
02-Jul	1,246	4,341	51	132	0	0	0	0	29	71
03-Jul	3,392	7,733	138	270	0	0	0	0	79	150
04-Jul	2,015	9,748	82	352	0	0	0	0	47	197
05-Jul	1,531	11,279	201	553	0	0	0	0	27	224
06-Jul	1,377	12,656	180	733	0	0	0	0	25	249
07-Jul	1,739	14,395	228	961	0	0	0	0	31	280
08-Jul	1,954	16,349	256	1,217	0	0	0	0	35	315
09-Jul	2,743	19,092	359	1,576	0	0	0	0	49	364
10-Jul	4,920	24,012	487	2,063	0	0	0	0	77	441
11-Jun	4,351	28,363	430	2,493	0	0	0	0	68	509
12-Jul	2,890	31,253	286	2,779	0	0	0	0	45	554
13-Jul	1,700	32,953	415	3,194	14	14	0	0	138	692
14-Jul	1,439	34,392	351	3,545	12	26	0	0	117	809
15-Jul	1,054	35,446	258	3,803	8	34	0	0	86	895
16-Jul	1,685	37,131	842	4,645	14	48	0	0	217	1,112
17-Jul	2,192	39,323	1,096	5,741	18	66	0	0	283	1,395
18-Jul	1,539	40,862	769	6,510	12	78	0	0	199	1,594
19-Jul	769	41,631	479	6,989	8	86	0	0	173	1,767
20-Jul	559	42,190	348	7,337	6	92	0	0	125	1,892
21-Jul	552	42,742	344	7,681	6	98	0	0	124	2,016
22-Jul	766	43,508	175	7,856	20	118	0	0	45	2,061
23-Jul	929	44,437	212	8,068	24	142	0	0	55	2,116
24-Jul	1,142	45,579	261	8,329	29	171	0	0	68	2,184
25-Jul	927	46,506	142	8,471	33	204	0	0	25	2,209
26-Jul	840	47,346	129	8,600	30	234	0	0	23	2,232
27-Jul	983	48,329	150	8,750	35	269	0	0	27	2,259
28-Jul	1,110	49,439	111	8,861	104	373	0	0	24	2,283
29-Jul	971	50,410	98	8,959	91	464	0	0	21	2,304
30-Jul	1,416	51,826	143	9,102	132	596	0	0	31	2,335
31-Jul	902	52,728	91	9,193	85	681	0	0	19	2,354
01-Aug	808	53,536	126	9,319	114	795	0	0	6	2,360
02-Aug	689	54,225	107	9,426	98	893	0	0	5	2,365
03-Aug	549	54,774	86	9,512	78	971	0	0	4	2,369
04-Aug	438	55,212	69	9,581	62	1,033	0	0	3	2,372
05-Aug	498	55,710	104	9,685	166	1,199	0	0	0	2,372

[a]Counts in Dolly Varden column are combined Dolly Varden char and chinook salmon counts.

FN: 97CR1C.XLS

Appendix A.22. Estimated salmon escapement adjacent to the south bank of the Crescent River, 24 June through 5 August 1997. Species composition of daily sonar counts based on fish wheel catches.[a]

	Sockeye		Pink		Chum		Coho		Dolly Varden	
Date	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
24-Jun	91	91	2	2	0	0	0	0	1	1
25-Jun	242	333	6	8	0	0	0	0	3	4
26-Jun	145	478	3	11	0	0	0	0	2	6
27-Jun	184	662	5	16	0	0	0	0	2	8
28-Jun	136	798	3	19	0	0	0	0	2	10
29-Jun	277	1,075	7	26	0	0	0	0	3	13
30-Jun	347	1,422	8	34	0	0	0	0	4	17
01-Jul	222	1,644	9	43	0	0	0	0	5	22
02-Jul	421	2,065	17	60	0	0	0	0	10	32
03-Jul	1,037	3,102	42	102	0	0	0	0	24	56
04-Jul	448	3,550	19	121	0	0	0	0	10	66
05-Jul	281	3,831	37	158	0	0	0	0	5	71
06-Jul	436	4,267	57	215	0	0	0	0	8	79
07-Jul	201	4,468	26	241	0	0	0	0	4	83
08-Jul	421	4,889	55	296	0	0	0	0	7	90
09-Jul	639	5,528	84	380	0	0	0	0	11	101
10-Jul	848	6,376	84	464	0	0	0	0	13	114
11-Jun	626	7,002	62	526	0	0	0	0	10	124
12-Jul	702	7,704	69	595	0	0	0	0	11	135
13-Jul	430	8,134	105	700	3	3	0	0	35	170
14-Jul	346	8,480	85	785	3	6	0	0	28	198
15-Jul	277	8,757	67	852	2	8	0	0	23	221
16-Jul	375	9,132	188	1,040	3	11	0	0	48	269
17-Jul	417	9,549	209	1,249	3	14	0	0	54	323
18-Jul	447	9,996	223	1,472	3	17	0	0	58	381
19-Jul	309	10,305	192	1,664	3	20	0	0	69	450
20-Jul	355	10,660	222	1,886	3	23	0	0	80	530
21-Jul	332	10,992	207	2,093	3	26	0	0	75	605
22-Jul	279	11,271	64	2,157	7	33	0	0	17	622
23-Jul	393	11,664	90	2,247	10	43	0	0	23	645
24-Jul	387	12,051	89	2,336	10	53	0	0	23	668
25-Jul	375	12,426	57	2,393	14	67	0	0	10	678
26-Jul	202	12,628	31	2,424	8	75	0	0	5	683
27-Jul	231	12,859	35	2,459	9	84	0	0	6	689
28-Jul	327	13,186	32	2,491	31	115	0	0	7	696
29-Jul	197	13,383	20	2,511	19	134	0	0	4	700
30-Jul	343	13,726	35	2,546	32	166	0	0	7	707
31-Jul	343	14,069	35	2,581	32	198	0	0	7	714
01-Aug	256	14,325	40	2,621	36	234	0	0	2	716
02-Aug	203	14,528	32	2,653	29	263	0	0	1	717
03-Aug	256	14,784	40	2,693	36	299	0	0	2	719
04-Aug	159	14,943	25	2,718	23	322	0	0	1	720
05-Aug	115	15,058	25	2,743	38	360	0	0	0	720

[a]Counts in Dolly Varden column are combined Dolly Varden char and chinook salmon counts.

FN: 97CR2C.XLS

Appendix A.23. Crescent River north bank sonar counts by hour, 24 June through 5 August 1997.

	Counts by Hour																								
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total	Cum Total
24-Jun	6	4	2	5	1	6	6	4	0	8	5	8	16	10	5	15	20	19	4	3	10	10	9	3	179	179
25-Jun	2	4	3	0	0	2	2	8	23	13	15	45	52	28	43	46	64	48	36	20	8	5	33	15	515	694
26-Jun	8	2	0	2	5	0	4	5	11	8	10	15	25	22	21	32	45	64	17	10	13	2	1	3	325	1,019
27-Jun	2	3	0	4	0	7	2	13	6	14	13	5	12	6	13	14	64	59	130	25	25	7	2	3	429	1,448
28-Jun	0	3	10	7	25	15	15	15	5	13	32	40	37	4	39	21	38	62	22	20	13	9	0	2	447	1,895
29-Jun	6	5	6	13	19	12	11	52	14	49	30	27	32	23	21	19	46	51	72	36	62	10	10	0	626	2,521
30-Jun	3	1	0	1	4	12	5	6	4	8	9	15	6	9	10	12	34	37	9	27	10	17	19	4	262	2,783
01-Jul	0	1	3	2	6	15	17	15	25	24	14	8	21	1	5	1	12	48	55	64	61	19	17	14	448	3,231
02-Jul	0	6	16	6	10	18	19	41	13	11	9	10	3	7	8	10	10	38	366	421	163	64	51	26	1,326	4,557
03-Jul	4	11	12	11	8	27	55	67	42	95	100	221	244	280	325	254	118	421	718	322	146	88	32	8	3,609	8,166
04-Jul	36	13	7	7	17	10	18	75	75	158	109	116	52	15	48	104	45	129	367	323	215	148	37	20	2,144	10,310
05-Jul	22	10	2	29	17	27	45	92	116	97	102	58	85	48	20	23	22	12	77	306	242	143	72	92	1,759	12,069
06-Jul	32	30	26	47	8	19	31	77	74	111	61	22	41	33	17	8	7	23	27	280	277	169	97	65	1,582	13,651
07-Jul	57	12	34	11	32	24	13	83	92	251	66	160	86	82	55	62	22	10	37	98	343	214	95	41	1,980	15,631
08-Jul	26	9	13	7	11	3	13	31	59	154	178	265	189	138	121	122	77	68	35	52	135	267	163	109	2,245	17,876
09-Jul	46	10	40	31	42	95	106	164	200	245	352	240	155	92	186	59	18	34	32	21	247	432	232	71	3,150	21,026
10-Jul	45	32	29	13	16	71	50	47	31	125	295	165	717	558	296	280	193	143	103	64	52	325	855	1,042	5,547	26,573
11-Jul	556	207	116	117	32	158	230	111	172	201	272	185	164	173	196	120	95	104	70	49	109	539	431	495	4,902	31,475
12-Jul	219	208	170	101	31	202	290	166	83	83	195	167	163	123	177	77	61	49	60	17	20	16	240	321	3,239	34,714
13-Jul	285	143	122	17	81	23	47	211	213	99	88	85	133	103	101	106	58	65	13	20	50	18	5	181	2,267	36,981
14-Jul	223	317	156	20	154	151	60	39	53	93	70	25	54	52	36	63	160	28	37	50	26	22	10	20	1,919	38,900
15-Jul	62	118	97	1	32	61	44	77	121	67	46	24	58	99	134	156	75	48	19	20	21	16	10	9	1,415	40,315
16-Jul	22	59	173	82	162	146	48	70	195	43	52	86	47	61	11	103	480	355	220	155	87	56	25	20	2,758	43,073
17-Jul	4	55	82	50	311	282	149	45	110	105	84	41	29	4	11	186	575	366	505	293	124	66	70	42	3,589	46,662
18-Jul	57	40	68	51	117	98	135	248	164	12	72	109	97	48	20	16	63	529	291	85	66	85	28	20	2,519	49,181

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Appendix A.23. (p.2 of 2)

	Counts by Hour																									
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total	Cum Total
19-Jul	14	15	17	83	164	110	47	45	22	56	26	19	31	20	11	18	17	312	206	41	61	68	15	11	1,429	50,610
20-Jul	7	0	7	9	19	22	32	25	12	19	5	9	4	7	10	6	8	39	307	114	116	97	89	64	1,027	51,637
21-Jul	50	59	51	27	42	49	128	64	35	29	13	2	9	15	9	1	0	9	139	80	31	69	90	24	1,025	52,662
22-Jul	31	9	9	36	20	40	11	29	42	45	13	20	18	28	4	8	5	10	44	283	121	92	47	41	1,006	53,668
23-Jul	47	65	44	13	15	6	13	34	30	57	41	37	35	13	19	29	25	18	7	19	250	239	90	70	1,216	54,884
24-Jul	38	28	33	51	15	27	8	16	64	18	78	47	48	36	29	25	49	14	16	18	181	321	170	170	1,500	56,384
25-Jul	112	53	48	17	25	71	73	60	37	44	105	104	12	47	22	29	19	23	7	23	28	64	47	57	1,127	57,511
26-Jul	15	64	79	60	50	66	64	77	61	40	40	37	29	103	52	27	29	33	14	29	22	11	7	13	1,022	58,533
27-Jul	27	25	18	23	59	22	56	50	121	73	72	40	38	32	98	97	62	110	86	31	30	10	3	12	1,195	59,728
28-Jul	6	22	43	43	18	37	26	90	104	86	87	85	34	38	88	188	126	73	53	45	22	18	11	6	1,349	61,077
29-Jul	7	13	8	50	41	17	38	51	116	151	92	58	40	39	18	47	98	111	87	52	16	30	5	6	1,191	62,268
30-Jul	3	8	3	32	22	34	41	45	19	77	49	43	12	3	38	79	384	243	376	89	63	8	21	30	1,722	63,990
31-Jul	9	11	13	30	47	88	29	37	37	28	22	11	19	17	14	19	21	131	141	171	100	31	29	42	1,097	65,087
01-Aug	49	25	16	12	17	87	65	13	47	72	53	23	9	11	4	7	15	127	127	125	85	18	28	25	1,060	66,147
02-Aug	22	13	2	13	12	34	50	27	34	12	11	20	52	15	11	18	6	78	102	152	108	71	35	1	899	67,046
03-Aug	9	9	4	32	100	17	13	10	12	58	33	26	8	13	14	10	14	14	73	97	50	49	24	28	717	67,763
04-Aug	44	5	18	8	11	29	13	15	43	24	9	16	16	7	8	18	11	14	76	88	39	28	12	20	572	68,335
05-Aug	26	18	28	3	55	47	14	14	25	47	32	20	19	15	18	15	17	19	23	74	130	38	52	23	772	69,107
Total	2,239	1,745	1,628	1,177	1,873	2,287	2,136	2,464	2,762	3,023	3,060	2,759	2,951	2,478	2,386	2,550	3,308	4,188	5,206	4,312	3,978	4,009	3,319	3,269	69,107	

Appendix A.24. Crescent River south bank sonar counts by hour, 24 June through 5 August 1997.

	Counts by Hour																								
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total	Cum Total
24-Jun	3	1	4	2	1	0	5	3	1	8	3	1	1	0	8	15	9	15	0	2	1	8	6	0	97	97
25-Jun	0	5	0	0	0	3	2	5	6	0	10	4	13	41	22	25	39	30	27	17	3	0	1	2	255	352
26-Jun	0	1	0	0	0	0	0	0	6	3	17	5	23	11	9	18	24	16	9	4	1	4	2	0	153	505
27-Jun	0	0	0	0	0	0	0	0	13	12	11	5	15	19	2	16	14	39	21	7	1	11	2	5	193	698
28-Jun	0	3	10	2	8	6	0	0	0	9	3	8	2	7	3	3	2	5	21	25	9	9	1	3	139	837
29-Jun	0	0	0	2	2	0	2	8	9	11	15	8	15	10	20	38	25	37	14	34	15	8	3	19	295	1,132
30-Jun	5	4	4	3	1	3	0	5	7	5	12	13	26	13	40	52	56	30	46	31	3	3	10	4	376	1,508
01-Jul	0	0	0	0	0	0	0	0	1	4	10	8	18	10	8	18	36	70	20	30	1	2	0	0	236	1,744
02-Jul	0	2	0	0	4	0	7	20	10	17	3	4	8	30	20	5	14	101	100	55	4	14	6	9	433	2,177
03-Jul	16	3	11	2	1	1	1	1	7	7	18	48	85	50	43	33	33	43	255	372	41	15	1	1	1,088	3,265
04-Jul	1	1	0	0	4	1	4	9	6	8	24	14	39	65	48	34	16	18	70	47	39	17	3	12	480	3,745
05-Jul	0	0	4	7	3	5	8	7	17	5	16	24	21	11	31	29	17	8	10	44	29	23	2	5	326	4,071
06-Jul	2	6	6	3	6	11	17	23	21	40	36	19	120	91	11	8	3	4	5	23	3	13	15	0	486	4,557
07-Jul	0	1	1	0	6	2	2	10	20	18	30	18	22	11	3	1	3	13	12	16	16	23	2	3	233	4,790
08-Jul	9	8	22	33	18	11	13	9	8	7	9	28	37	56	44	37	52	21	1	2	14	6	15	9	469	5,259
09-Jul	15	8	12	10	10	10	10	18	53	28	62	116	136	19	12	8	4	12	10	9	19	33	38	12	664	5,923
10-Jul	7	4	2	7	1	10	9	13	12	12	19	60	133	152	168	63	99	29	12	4	9	31	51	38	945	6,868
11-Jul	54	18	13	4	7	16	20	22	42	62	40	22	35	30	26	49	21	20	16	5	19	66	56	35	698	7,566
12-Jul	21	8	9	7	19	26	8	18	53	29	53	28	105	138	105	52	23	25	16	12	5	4	13	9	786	8,352
13-Jul	12	17	5	1	2	15	29	31	44	23	25	20	37	60	39	33	30	17	23	54	25	10	9	12	573	8,925
14-Jul	19	11	12	17	2	9	13	12	25	28	10	38	35	34	18	16	14	31	23	32	29	24	8	2	462	9,387
15-Jul	12	19	25	17	13	20	4	12	17	11	4	4	22	26	13	33	45	29	29	6	2	2	4	2	371	9,758
16-Jul	0	2	18	13	16	17	13	8	17	23	19	4	46	41	34	46	85	72	51	48	31	5	2	3	614	10,372
17-Jul	0	5	13	17	14	14	7	3	18	9	8	10	6	11	14	35	121	177	141	33	15	5	7	5	688	11,060
18-Jul	5	3	8	32	10	13	25	53	37	21	15	5	14	28	16	18	26	202	66	27	24	53	5	5	711	11,771

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Appendix A.24. (p.2 of 2)

	Counts by Hour																								
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total	Cum Total
19-Jul	2	2	11	9	37	29	9	9	16	9	5	5	1	2	7	6	11	54	159	110	52	18	10	4	577	12,348
20-Jul	1	0	0	15	16	15	20	23	19	6	9	5	4	30	23	16	12	99	212	71	23	35	6	5	665	13,013
21-Jul	14	5	5	2	3	12	9	15	15	13	10	2	3	64	35	19	8	25	130	128	55	23	15	11	621	13,634
22-Jul	5	11	2	13	22	4	10	13	10	4	6	6	5	5	1	13	21	8	16	60	76	37	17	8	373	14,007
23-Jul	9	7	5	1	2	6	4	6	12	10	5	4	13	1	13	9	14	18	44	107	99	79	21	27	516	14,523
24-Jul	6	14	5	0	2	15	6	4	10	8	16	23	20	61	27	30	8	21	2	3	63	92	53	20	509	15,032
25-Jul	14	5	14	19	27	30	15	10	13	14	10	15	26	14	34	36	31	12	5	3	19	57	15	21	459	15,491
26-Jul	19	18	3	1	11	21	12	4	7	1	3	26	23	23	15	2	6	9	13	21	5	1	1	3	248	15,739
27-Jul	8	1	2	2	2	12	27	15	11	7	8	14	19	10	17	13	69	33	4	3	2	3	2	3	287	16,026
28-Jul	2	5	7	11	7	8	37	22	16	15	21	10	15	14	58	70	41	13	20	6	4	4	1	1	408	16,434
29-Jul	1	0	0	10	4	2	16	3	14	22	13	10	20	14	10	13	20	39	20	3	0	4	2	2	242	16,676
30-Jul	2	0	0	4	5	10	9	16	15	19	14	17	10	25	25	31	41	44	44	59	15	9	6	4	424	17,100
31-Jul	11	2	1	5	7	10	11	12	14	8	11	14	14	10	12	7	17	51	83	70	24	14	9	0	417	17,517
01-Aug	1	4	0	5	5	19	12	8	8	13	4	10	11	37	6	9	12	57	71	17	12	9	3	1	334	17,851
02-Aug	2	7	0	0	6	5	10	14	12	7	1	4	2	5	2	17	26	23	55	14	48	1	1	3	265	18,116
03-Aug	5	10	6	4	0	5	2	13	9	6	6	9	7	4	11	9	9	31	89	57	28	13	3	3	339	18,455
04-Aug	1	1	0	1	0	16	13	15	28	21	9	19	10	3	6	5	8	13	15	11	4	1	3	7	210	18,665
05-Aug	1	5	0	3	4	2	1	5	5	11	14	8	6	7	19	9	3	8	4	18	23	8	9	7	180	18,845
Total	285	227	240	284	308	414	422	497	684	594	637	715	1,223	1,293	1,078	999	1,168	1,622	1,984	1,700	910	797	439	325	18,845	

Appendix A.25. Crescent River north bank sonar counts by hour, 24 June through 5 August 1997. Counts expressed as percentage of daily total.

	Counts by Hour																							
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total
24-Jun	3.4	2.2	1.1	2.8	0.6	3.4	3.4	2.2	0.0	4.5	2.8	4.5	8.9	5.6	2.8	8.4	11.2	10.6	2.2	1.7	5.6	5.6	5.0	1.7	100.2
25-Jun	0.4	0.8	0.6	0.0	0.0	0.4	0.4	1.6	4.5	2.5	2.9	8.7	10.1	5.4	8.3	8.9	12.4	9.3	7.0	3.9	1.6	1.0	6.4	2.9	100.0
26-Jun	2.5	0.6	0.0	0.6	1.5	0.0	1.2	1.5	3.4	2.5	3.1	4.6	7.7	6.8	6.5	9.8	13.8	19.7	5.2	3.1	4.0	0.6	0.3	0.9	99.9
27-Jun	0.5	0.7	0.0	0.9	0.0	1.6	0.5	3.0	1.4	3.3	3.0	1.2	2.8	1.4	3.0	3.3	14.9	13.8	30.3	5.8	5.8	1.6	0.5	0.7	100.0
28-Jun	0.0	0.7	2.2	1.6	5.6	3.4	3.4	3.4	1.1	2.9	7.2	8.9	8.3	0.9	8.7	4.7	8.5	13.9	4.9	4.5	2.9	2.0	0.0	0.4	100.1
29-Jun	1.0	0.8	1.0	2.1	3.0	1.9	1.8	8.3	2.2	7.8	4.8	4.3	5.1	3.7	3.4	3.0	7.3	8.1	11.5	5.8	9.9	1.6	1.6	0.0	100.0
30-Jun	1.1	0.4	0.0	0.4	1.5	4.6	1.9	2.3	1.5	3.1	3.4	5.7	2.3	3.4	3.8	4.6	13.0	14.1	3.4	10.3	3.8	6.5	7.3	1.5	99.9
01-Jul	0.0	0.2	0.7	0.4	1.3	3.3	3.8	3.3	5.6	5.4	3.1	1.8	4.7	0.2	1.1	0.2	2.7	10.7	12.3	14.3	13.6	4.2	3.8	3.1	99.8
02-Jul	0.0	0.5	1.2	0.5	0.8	1.4	1.4	3.1	1.0	0.8	0.7	0.8	0.2	0.5	0.6	0.8	0.8	2.9	27.6	31.7	12.3	4.8	3.8	2.0	100.2
03-Jul	0.1	0.3	0.3	0.3	0.2	0.7	1.5	1.9	1.2	2.6	2.8	6.1	6.8	7.8	9.0	7.0	3.3	11.7	19.9	8.9	4.0	2.4	0.9	0.2	99.9
04-Jul	1.7	0.6	0.3	0.3	0.8	0.5	0.8	3.5	3.5	7.4	5.1	5.4	2.4	0.7	2.2	4.9	2.1	6.0	17.1	15.1	10.0	6.9	1.7	0.9	99.9
05-Jul	1.3	0.6	0.1	1.6	1.0	1.5	2.6	5.2	6.6	5.5	5.8	3.3	4.8	2.7	1.1	1.3	1.3	0.7	4.4	17.4	13.8	8.1	4.1	5.2	100.0
06-Jul	2.0	1.9	1.6	3.0	0.5	1.2	2.0	4.9	4.7	7.0	3.9	1.4	2.6	2.1	1.1	0.5	0.4	1.5	1.7	17.7	17.5	10.7	6.1	4.1	100.1
07-Jul	2.9	0.6	1.7	0.6	1.6	1.2	0.7	4.2	4.6	12.7	3.3	8.1	4.3	4.1	2.8	3.1	1.1	0.5	1.9	4.9	17.3	10.8	4.8	2.1	99.9
08-Jul	1.2	0.4	0.6	0.3	0.5	0.1	0.6	1.4	2.6	6.9	7.9	11.8	8.4	6.1	5.4	5.4	3.4	3.0	1.6	2.3	6.0	11.9	7.3	4.9	100.0
09-Jul	1.5	0.3	1.3	1.0	1.3	3.0	3.4	5.2	6.3	7.8	11.2	7.6	4.9	2.9	5.9	1.9	0.6	1.1	1.0	0.7	7.8	13.7	7.4	2.3	100.1
10-Jul	0.8	0.6	0.5	0.2	0.3	1.3	0.9	0.8	0.6	2.3	5.3	3.0	12.9	10.1	5.3	5.0	3.5	2.6	1.9	1.2	0.9	5.9	15.4	18.8	100.1
11-Jul	11.3	4.2	2.4	2.4	0.7	3.2	4.7	2.3	3.5	4.1	5.5	3.8	3.3	3.5	4.0	2.4	1.9	2.1	1.4	1.0	2.2	11.0	8.8	10.1	99.8
12-Jul	6.8	6.4	5.2	3.1	1.0	6.2	9.0	5.1	2.6	2.6	6.0	5.2	5.0	3.8	5.5	2.4	1.9	1.5	1.9	0.5	0.6	0.5	7.4	9.9	100.1
13-Jul	12.6	6.3	5.4	0.7	3.6	1.0	2.1	9.3	9.4	4.4	3.9	3.7	5.9	4.5	4.5	4.7	2.6	2.9	0.6	0.9	2.2	0.8	0.2	8.0	100.2
14-Jul	11.6	16.5	8.1	1.0	8.0	7.9	3.1	2.0	2.8	4.8	3.6	1.3	2.8	2.7	1.9	3.3	8.3	1.5	1.9	2.6	1.4	1.1	0.5	1.0	99.7
15-Jul	4.4	8.3	6.9	0.1	2.3	4.3	3.1	5.4	8.6	4.7	3.3	1.7	4.1	7.0	9.5	11.0	5.3	3.4	1.3	1.4	1.5	1.1	0.7	0.6	100.0
16-Jul	0.8	2.1	6.3	3.0	5.9	5.3	1.7	2.5	7.1	1.6	1.9	3.1	1.7	2.2	0.4	3.7	17.4	12.9	8.0	5.6	3.2	2.0	0.9	0.7	100.0
17-Jul	0.1	1.5	2.3	1.4	8.7	7.9	4.2	1.3	3.1	2.9	2.3	1.1	0.8	0.1	0.3	5.2	16.0	10.2	14.1	8.2	3.5	1.8	2.0	1.2	100.2
18-Jul	2.3	1.6	2.7	2.0	4.6	3.9	5.4	9.8	6.5	0.5	2.9	4.3	3.9	1.9	0.8	0.6	2.5	21.0	11.6	3.4	2.6	3.4	1.1	0.8	100.1

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Appendix A.25. (p.2 of 2)

Date	Counts by Hour																							Daily Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
19-Jul	1.0	1.0	1.2	5.8	11.5	7.7	3.3	3.1	1.5	3.9	1.8	1.3	2.2	1.4	0.8	1.3	1.2	21.8	14.4	2.9	4.3	4.8	1.0	0.8	100.0
20-Jul	0.7	0.0	0.7	0.9	1.9	2.1	3.1	2.4	1.2	1.9	0.5	0.9	0.4	0.7	1.0	0.6	0.8	3.8	29.9	11.1	11.3	9.4	8.7	6.2	100.2
21-Jul	4.9	5.8	5.0	2.6	4.1	4.8	12.5	6.2	3.4	2.8	1.3	0.2	0.9	1.5	0.9	0.1	0.0	0.9	13.6	7.8	3.0	6.7	8.8	2.3	100.1
22-Jul	3.1	0.9	0.9	3.6	2.0	4.0	1.1	2.9	4.2	4.5	1.3	2.0	1.8	2.8	0.4	0.8	0.5	1.0	4.4	28.1	12.0	9.1	4.7	4.1	100.2
23-Jul	3.9	5.3	3.6	1.1	1.2	0.5	1.1	2.8	2.5	4.7	3.4	3.0	2.9	1.1	1.6	2.4	2.1	1.5	0.6	1.6	20.6	19.7	7.4	5.8	100.4
24-Jul	2.5	1.9	2.2	3.4	1.0	1.8	0.5	1.1	4.3	1.2	5.2	3.1	3.2	2.4	1.9	1.7	3.3	0.9	1.1	1.2	12.1	21.4	11.3	11.3	100.0
25-Jul	9.9	4.7	4.3	1.5	2.2	6.3	6.5	5.3	3.3	3.9	9.3	9.2	1.1	4.2	2.0	2.6	1.7	2.0	0.6	2.0	2.5	5.7	4.2	5.1	100.1
26-Jul	1.5	6.3	7.7	5.9	4.9	6.5	6.3	7.5	6.0	3.9	3.9	3.6	2.8	10.1	5.1	2.6	2.8	3.2	1.4	2.8	2.2	1.1	0.7	1.3	100.1
27-Jul	2.3	2.1	1.5	1.9	4.9	1.8	4.7	4.2	10.1	6.1	6.0	3.3	3.2	2.7	8.2	8.1	5.2	9.2	7.2	2.6	2.5	0.8	0.3	1.0	99.9
28-Jul	0.4	1.6	3.2	3.2	1.3	2.7	1.9	6.7	7.7	6.4	6.4	6.3	2.5	2.8	6.5	13.9	9.3	5.4	3.9	3.3	1.6	1.3	0.8	0.4	99.5
29-Jul	0.6	1.1	0.7	4.2	3.4	1.4	3.2	4.3	9.7	12.7	7.7	4.9	3.4	3.3	1.5	3.9	8.2	9.3	7.3	4.4	1.3	2.5	0.4	0.5	99.9
30-Jul	0.2	0.5	0.2	1.9	1.3	2.0	2.4	2.6	1.1	4.5	2.8	2.5	0.7	0.2	2.2	4.6	22.3	14.1	21.8	5.2	3.7	0.5	1.2	1.7	100.2
31-Jul	0.8	1.0	1.2	2.7	4.3	8.0	2.6	3.4	3.4	2.6	2.0	1.0	1.7	1.5	1.3	1.7	1.9	11.9	12.9	15.6	9.1	2.8	2.6	3.8	99.8
01-Aug	4.6	2.4	1.5	1.1	1.6	8.2	6.1	1.2	4.4	6.8	5.0	2.2	0.8	1.0	0.4	0.7	1.4	12.0	12.0	11.8	8.0	1.7	2.6	2.4	99.9
02-Aug	2.4	1.4	0.2	1.4	1.3	3.8	5.6	3.0	3.8	1.3	1.2	2.2	5.8	1.7	1.2	2.0	0.7	8.7	11.3	16.9	12.0	7.9	3.9	0.1	99.8
03-Aug	1.3	1.3	0.6	4.5	13.9	2.4	1.8	1.4	1.7	8.1	4.6	3.6	1.1	1.8	2.0	1.4	2.0	2.0	10.2	13.5	7.0	6.8	3.3	3.9	100.2
04-Aug	7.7	0.9	3.1	1.4	1.9	5.1	2.3	2.6	7.5	4.2	1.6	2.8	2.8	1.2	1.4	3.1	1.9	2.4	13.3	15.4	6.8	4.9	2.1	3.5	99.9
05-Aug	3.4	2.3	3.6	0.4	7.1	6.1	1.8	1.8	3.2	6.1	4.1	2.6	2.5	1.9	2.3	1.9	2.2	2.5	3.0	9.6	16.8	4.9	6.7	3.0	99.8
Total	3.2	2.5	2.4	1.7	2.7	3.3	3.1	3.6	4.0	4.4	4.4	4.0	4.3	3.6	3.5	3.7	4.8	6.1	7.5	6.2	5.8	5.8	4.8	4.7	100.1

Appendix A.26. Crescent River south bank sonar counts by hour, 24 June through 5 August 1997. Counts expressed as percentage of daily total.

Date	Counts by Hour																							Daily Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
24-Jun	3.1	1.0	4.1	2.1	1.0	0.0	5.2	3.1	1.0	8.2	3.1	1.0	1.0	0.0	8.2	15.5	9.3	15.5	0.0	2.1	1.0	8.2	6.2	0.0	99.9
25-Jun	0.0	2.0	0.0	0.0	0.0	1.2	0.8	2.0	2.4	0.0	3.9	1.6	5.1	16.1	8.6	9.8	15.3	11.8	10.6	6.7	1.2	0.0	0.4	0.8	100.3
26-Jun	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	3.9	2.0	11.1	3.3	15.0	7.2	5.9	11.8	15.7	10.5	5.9	2.6	0.7	2.6	1.3	0.0	100.2
27-Jun	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7	6.2	5.7	2.6	7.8	9.8	1.0	8.3	7.3	20.2	10.9	3.6	0.5	5.7	1.0	2.6	99.9
28-Jun	0.0	2.2	7.2	1.4	5.8	4.3	0.0	0.0	0.0	6.5	2.2	5.8	1.4	5.0	2.2	2.2	1.4	3.6	15.1	18.0	6.5	6.5	0.7	2.2	100.2
29-Jun	0.0	0.0	0.0	0.7	0.7	0.0	0.7	2.7	3.1	3.7	5.1	2.7	5.1	3.4	6.8	12.9	8.5	12.5	4.7	11.5	5.1	2.7	1.0	6.4	100.0
30-Jun	1.3	1.1	1.1	0.8	0.3	0.8	0.0	1.3	1.9	1.3	3.2	3.5	6.9	3.5	10.6	13.8	14.9	8.0	12.2	8.2	0.8	0.8	2.7	1.1	100.1
01-Jul	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.7	4.2	3.4	7.6	4.2	3.4	7.6	15.3	29.7	8.5	12.7	0.4	0.8	0.0	0.0	99.9
02-Jul	0.0	0.5	0.0	0.0	0.9	0.0	1.6	4.6	2.3	3.9	0.7	0.9	1.8	6.9	4.6	1.2	3.2	23.3	23.1	12.7	0.9	3.2	1.4	2.1	99.8
03-Jul	1.5	0.3	1.0	0.2	0.1	0.1	0.1	0.1	0.6	0.6	1.7	4.4	7.8	4.6	4.0	3.0	3.0	4.0	23.4	34.2	3.8	1.4	0.1	0.1	100.1
04-Jul	0.2	0.2	0.0	0.0	0.8	0.2	0.8	1.9	1.3	1.7	5.0	2.9	8.1	13.5	10.0	7.1	3.3	3.8	14.6	9.8	8.1	3.5	0.6	2.5	99.9
05-Jul	0.0	0.0	1.2	2.1	0.9	1.5	2.5	2.1	5.2	1.5	4.9	7.4	6.4	3.4	9.5	8.9	5.2	2.5	3.1	13.5	8.9	7.1	0.6	1.5	99.9
06-Jul	0.4	1.2	1.2	0.6	1.2	2.3	3.5	4.7	4.3	8.2	7.4	3.9	24.7	18.7	2.3	1.6	0.6	0.8	1.0	4.7	0.6	2.7	3.1	0.0	99.7
07-Jul	0.0	0.4	0.4	0.0	2.6	0.9	0.9	4.3	8.6	7.7	12.9	7.7	9.4	4.7	1.3	0.4	1.3	5.6	5.2	6.9	6.9	9.9	0.9	1.3	100.2
08-Jul	1.9	1.7	4.7	7.0	3.8	2.3	2.8	1.9	1.7	1.5	1.9	6.0	7.9	11.9	9.4	7.9	11.1	4.5	0.2	0.4	3.0	1.3	3.2	1.9	99.9
09-Jul	2.3	1.2	1.8	1.5	1.5	1.5	1.5	2.7	8.0	4.2	9.3	17.5	20.5	2.9	1.8	1.2	0.6	1.8	1.5	1.4	2.9	5.0	5.7	1.8	100.1
10-Jul	0.7	0.4	0.2	0.7	0.1	1.1	1.0	1.4	1.3	1.3	2.0	6.3	14.1	16.1	17.8	6.7	10.5	3.1	1.3	0.4	1.0	3.3	5.4	4.0	100.2
11-Jul	7.7	2.6	1.9	0.6	1.0	2.3	2.9	3.2	6.0	8.9	5.7	3.2	5.0	4.3	3.7	7.0	3.0	2.9	2.3	0.7	2.7	9.5	8.0	5.0	100.1
12-Jul	2.7	1.0	1.1	0.9	2.4	3.3	1.0	2.3	6.7	3.7	6.7	3.6	13.4	17.6	13.4	6.6	2.9	3.2	2.0	1.5	0.6	0.5	1.7	1.1	99.9
13-Jul	2.1	3.0	0.9	0.2	0.3	2.6	5.1	5.4	7.7	4.0	4.4	3.5	6.5	10.5	6.8	5.8	5.2	3.0	4.0	9.4	4.4	1.7	1.6	2.1	100.2
14-Jul	4.1	2.4	2.6	3.7	0.4	1.9	2.8	2.6	5.4	6.1	2.2	8.2	7.6	7.4	3.9	3.5	3.0	6.7	5.0	6.9	6.3	5.2	1.7	0.4	100.0
15-Jul	3.2	5.1	6.7	4.6	3.5	5.4	1.1	3.2	4.6	3.0	1.1	1.1	5.9	7.0	3.5	8.9	12.1	7.8	7.8	1.6	0.5	0.5	1.1	0.5	99.8
16-Jul	0.0	0.3	2.9	2.1	2.6	2.8	2.1	1.3	2.8	3.7	3.1	0.7	7.5	6.7	5.5	7.5	13.8	11.7	8.3	7.8	5.0	0.8	0.3	0.5	99.8
17-Jul	0.0	0.7	1.9	2.5	2.0	2.0	1.0	0.4	2.6	1.3	1.2	1.5	0.9	1.6	2.0	5.1	17.6	25.7	20.5	4.8	2.2	0.7	1.0	0.7	99.9
18-Jul	0.7	0.4	1.1	4.5	1.4	1.8	3.5	7.5	5.2	3.0	2.1	0.7	2.0	3.9	2.3	2.5	3.7	28.4	9.3	3.8	3.4	7.5	0.7	0.7	100.1

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Appendix A.26. (p.2 of 2)

	Counts by Hour																							
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total
19-Jul	0.3	0.3	1.9	1.6	6.4	5.0	1.6	1.6	2.8	1.6	0.9	0.9	0.2	0.3	1.2	1.0	1.9	9.4	27.6	19.1	9.0	3.1	1.7	0.7	100.1
20-Jul	0.2	0.0	0.0	2.3	2.4	2.3	3.0	3.5	2.9	0.9	1.4	0.8	0.6	4.5	3.5	2.4	1.8	14.9	31.9	10.7	3.5	5.3	0.9	0.8	100.5
21-Jul	2.3	0.8	0.8	0.3	0.5	1.9	1.4	2.4	2.4	2.1	1.6	0.3	0.5	10.3	5.6	3.1	1.3	4.0	20.9	20.6	8.9	3.7	2.4	1.8	99.9
22-Jul	1.3	2.9	0.5	3.5	5.9	1.1	2.7	3.5	2.7	1.1	1.6	1.6	1.3	1.3	0.3	3.5	5.6	2.1	4.3	16.1	20.4	9.9	4.6	2.1	99.9
23-Jul	1.7	1.4	1.0	0.2	0.4	1.2	0.8	1.2	2.3	1.9	1.0	0.8	2.5	0.2	2.5	1.7	2.7	3.5	8.5	20.7	19.2	15.3	4.1	5.2	100.0
24-Jul	1.2	2.8	1.0	0.0	0.4	2.9	1.2	0.8	2.0	1.6	3.1	4.5	3.9	12.0	5.3	5.9	1.6	4.1	0.4	0.6	12.4	18.1	10.4	3.9	100.1
25-Jul	3.1	1.1	3.1	4.1	5.9	6.5	3.3	2.2	2.8	3.1	2.2	3.3	5.7	3.1	7.4	7.8	6.8	2.6	1.1	0.7	4.1	12.4	3.3	4.6	100.3
26-Jul	7.7	7.3	1.2	0.4	4.4	8.5	4.8	1.6	2.8	0.4	1.2	10.5	9.3	9.3	6.0	0.8	2.4	3.6	5.2	8.5	2.0	0.4	0.4	1.2	99.9
27-Jul	2.8	0.3	0.7	0.7	0.7	4.2	9.4	5.2	3.8	2.4	2.8	4.9	6.6	3.5	5.9	4.5	24.0	11.5	1.4	1.0	0.7	1.0	0.7	1.0	99.7
28-Jul	0.5	1.2	1.7	2.7	1.7	2.0	9.1	5.4	3.9	3.7	5.1	2.5	3.7	3.4	14.2	17.2	10.0	3.2	4.9	1.5	1.0	1.0	0.2	0.2	100.0
29-Jul	0.4	0.0	0.0	4.1	1.7	0.8	6.6	1.2	5.8	9.1	5.4	4.1	8.3	5.8	4.1	5.4	8.3	16.1	8.3	1.2	0.0	1.7	0.8	0.8	100.0
30-Jul	0.5	0.0	0.0	0.9	1.2	2.4	2.1	3.8	3.5	4.5	3.3	4.0	2.4	5.9	5.9	7.3	9.7	10.4	10.4	13.9	3.5	2.1	1.4	0.9	100.0
31-Jul	2.6	0.5	0.2	1.2	1.7	2.4	2.6	2.9	3.4	1.9	2.6	3.4	3.4	2.4	2.9	1.7	4.1	12.2	19.9	16.8	5.8	3.4	2.2	0.0	100.2
01-Aug	0.3	1.2	0.0	1.5	1.5	5.7	3.6	2.4	2.4	3.9	1.2	3.0	3.3	11.1	1.8	2.7	3.6	17.1	21.3	5.1	3.6	2.7	0.9	0.3	100.2
02-Aug	0.8	2.6	0.0	0.0	2.3	1.9	3.8	5.3	4.5	2.6	0.4	1.5	0.8	1.9	0.8	6.4	9.8	8.7	20.8	5.3	18.1	0.4	0.4	1.1	100.2
03-Aug	1.5	2.9	1.8	1.2	0.0	1.5	0.6	3.8	2.7	1.8	1.8	2.7	2.1	1.2	3.2	2.7	2.7	9.1	26.3	16.8	8.3	3.8	0.9	0.9	100.3
04-Aug	0.5	0.5	0.0	0.5	0.0	7.6	6.2	7.1	13.3	10.0	4.3	9.0	4.8	1.4	2.9	2.4	3.8	6.2	7.1	5.2	1.9	0.5	1.4	3.3	99.9
05-Aug	0.6	2.8	0.0	1.7	2.2	1.1	0.6	2.8	2.8	6.1	7.8	4.4	3.3	3.9	10.6	5.0	1.7	4.4	2.2	10.0	12.8	4.4	5.0	3.9	100.1
Total	1.5	1.2	1.3	1.5	1.6	2.2	2.2	2.6	3.6	3.2	3.4	3.8	6.5	6.9	5.7	5.3	6.2	8.6	10.5	9.0	4.8	4.2	2.3	1.7	99.8

Appendix A.27. Crescent River north bank sonar counts by sector, 24 June through 5 August 1997.

	Counts by Sector													
Date	1	2	3	4	5	6	7	8	9	10	11	12	Daily Total	Cum Total
24-Jun	18	76	58	15	0	5	1	0	1	0	0	5	179	179
25-Jun	30	159	283	23	10	3	2	3	0	0	0	2	515	694
26-Jun	19	101	184	14	3	1	0	0	2	1	0	0	325	1,019
27-Jun	184	84	116	28	10	3	1	0	0	0	0	3	429	1,448
28-Jun	35	124	180	88	17	0	1	1	0	0	1	0	447	1,895
29-Jun	49	149	338	66	12	4	2	1	0	0	0	5	626	2,521
30-Jun	29	109	114	7	2	0	0	0	0	0	0	1	262	2,783
01-Jul	26	120	248	37	5	2	3	2	1	1	1	2	448	3,231
02-Jul	88	485	470	160	62	37	17	3	3	0	0	1	1,326	4,557
03-Jul	102	1,303	1,238	548	289	71	27	18	6	6	1	0	3,609	8,166
04-Jul	137	1,069	567	238	49	26	23	10	7	12	5	1	2,144	10,310
05-Jul	87	861	442	226	93	25	6	8	9	1	0	1	1,759	12,069
06-Jul	142	568	491	254	70	26	11	9	7	4	0	0	1,582	13,651
07-Jul	166	535	849	204	112	47	23	16	17	3	3	5	1,980	15,631
08-Jul	120	497	1,086	329	148	35	12	10	7	0	1	0	2,245	17,876
09-Jul	229	607	1,273	714	232	37	38	5	5	7	2	1	3,150	21,026
10-Jul	189	771	2,852	1,273	249	120	50	12	22	8	1	0	5,547	26,573
11-Jul	163	753	2,468	916	310	216	36	11	12	6	10	1	4,902	31,475
12-Jul	49	375	1,621	766	278	101	22	8	12	5	1	1	3,239	34,714
13-Jul	47	295	1,095	474	161	96	39	10	30	11	5	4	2,267	36,981
14-Jul	92	379	750	287	176	103	68	16	26	14	7	1	1,919	38,900
15-Jul	172	481	509	132	58	22	10	6	10	5	6	4	1,415	40,315
16-Jul	402	1,013	736	237	109	21	11	24	85	60	41	19	2,758	43,073
17-Jul	383	2,058	877	148	17	7	1	1	13	34	33	17	3,589	46,662
18-Jul	197	1,334	732	101	17	7	1	6	13	57	38	16	2,519	49,181
19-Jul	137	517	343	41	3	31	19	18	55	124	108	33	1,429	50,610
20-Jul	92	358	262	32	9	18	15	17	37	67	69	51	1,027	51,637
21-Jul	82	312	275	71	18	18	18	19	19	51	95	47	1,025	52,662
22-Jul	94	374	248	60	22	17	8	14	20	56	53	40	1,006	53,668
23-Jul	83	431	369	80	30	17	15	23	28	49	59	32	1,216	54,884
24-Jul	93	580	518	78	23	21	14	24	35	51	48	15	1,500	56,384
25-Jul	107	475	330	79	25	20	20	19	9	21	19	3	1,127	57,511
26-Jul	76	509	316	70	14	10	2	1	1	10	11	2	1,022	58,533
27-Jul	70	566	441	64	18	8	3	4	4	8	8	1	1,195	59,728
28-Jul	77	661	505	75	10	5	4	1	4	1	5	1	1,349	61,077
29-Jul	67	485	527	84	15	3	2	1	1	2	4	0	1,191	62,268
30-Jul	124	862	587	106	11	9	10	4	1	5	3	0	1,722	63,990
31-Jul	82	427	464	83	15	3	4	7	2	1	6	3	1,097	65,087
01-Aug	94	467	366	69	26	3	6	2	10	8	2	7	1,060	66,147
02-Aug	63	302	335	112	36	2	12	11	8	12	2	4	899	67,046
03-Aug	72	245	265	81	13	4	6	8	4	6	8	5	717	67,763
04-Aug	90	134	186	97	18	5	12	11	7	6	2	4	572	68,335
05-Aug	86	208	332	87	23	14	6	3	3	6	3	1	772	69,107
Total	4,744	22,219	26,246	8,654	2,818	1,223	581	367	536	719	661	339	69,107	

FN: 97CR1SC.XLS

Appendix A.28. Crescent River south bank sonar counts by sector, 24 June through 5 August 1997.

	Counts by Sector													
Date	1	2	3	4	5	6	7	8	9	10	11	12	Daily Total	Cum Total
24-Jun	94	3	0	0	0	0	0	0	0	0	0	0	97	97
25-Jun	246	9	0	0	0	0	0	0	0	0	0	0	255	352
26-Jun	148	5	0	0	0	0	0	0	0	0	0	0	153	505
27-Jun	179	14	0	0	0	0	0	0	0	0	0	0	193	698
28-Jun	127	12	0	0	0	0	0	0	0	0	0	0	139	837
29-Jun	285	10	0	0	0	0	0	0	0	0	0	0	295	1,132
30-Jun	354	22	0	0	0	0	0	0	0	0	0	0	376	1,508
01-Jul	235	1	0	0	0	0	0	0	0	0	0	0	236	1,744
02-Jul	426	7	0	0	0	0	0	0	0	0	0	0	433	2,177
03-Jul	1,053	35	0	0	0	0	0	0	0	0	0	0	1,088	3,265
04-Jul	469	11	0	0	0	0	0	0	0	0	0	0	480	3,745
05-Jul	307	19	0	0	0	0	0	0	0	0	0	0	326	4,071
06-Jul	471	15	0	0	0	0	0	0	0	0	0	0	486	4,557
07-Jul	220	13	0	0	0	0	0	0	0	0	0	0	233	4,790
08-Jul	438	31	0	0	0	0	0	0	0	0	0	0	469	5,259
09-Jul	615	49	0	0	0	0	0	0	0	0	0	0	664	5,923
10-Jul	941	4	0	0	0	0	0	0	0	0	0	0	945	6,868
11-Jul	693	5	0	0	0	0	0	0	0	0	0	0	698	7,566
12-Jul	765	21	0	0	0	0	0	0	0	0	0	0	786	8,352
13-Jul	548	25	0	0	0	0	0	0	0	0	0	0	573	8,925
14-Jul	449	13	0	0	0	0	0	0	0	0	0	0	462	9,387
15-Jul	350	21	0	0	0	0	0	0	0	0	0	0	371	9,758
16-Jul	550	64	0	0	0	0	0	0	0	0	0	0	614	10,372
17-Jul	681	7	0	0	0	0	0	0	0	0	0	0	688	11,060
18-Jul	705	6	0	0	0	0	0	0	0	0	0	0	711	11,771
19-Jul	567	10	0	0	0	0	0	0	0	0	0	0	577	12,348
20-Jul	658	7	0	0	0	0	0	0	0	0	0	0	665	13,013
21-Jul	609	12	0	0	0	0	0	0	0	0	0	0	621	13,634
22-Jul	362	11	0	0	0	0	0	0	0	0	0	0	373	14,007
23-Jul	509	7	0	0	0	0	0	0	0	0	0	0	516	14,523
24-Jul	507	2	0	0	0	0	0	0	0	0	0	0	509	15,032
25-Jul	450	9	0	0	0	0	0	0	0	0	0	0	459	15,491
26-Jul	245	3	0	0	0	0	0	0	0	0	0	0	248	15,739
27-Jul	278	9	0	0	0	0	0	0	0	0	0	0	287	16,026
28-Jul	391	17	0	0	0	0	0	0	0	0	0	0	408	16,434
29-Jul	237	5	0	0	0	0	0	0	0	0	0	0	242	16,676
30-Jul	403	21	0	0	0	0	0	0	0	0	0	0	424	17,100
31-Jul	405	12	0	0	0	0	0	0	0	0	0	0	417	17,517
01-Aug	324	10	0	0	0	0	0	0	0	0	0	0	334	17,851
02-Aug	255	10	0	0	0	0	0	0	0	0	0	0	265	18,116
03-Aug	329	10	0	0	0	0	0	0	0	0	0	0	339	18,455
04-Aug	204	6	0	0	0	0	0	0	0	0	0	0	210	18,665
05-Aug	177	3	0	0	0	0	0	0	0	0	0	0	180	18,845
Total	18,259	586	0	0	0	0	0	0	0	0	0	0	18,845	

FN: 97CR2SC.XLS

Appendix A.29. Crescent River north bank sonar counts by sector, 24 June through 5 August 1997. Counts expressed as percentage of daily total.

	Counts by Sector												
Date	1	2	3	4	5	6	7	8	9	10	11	12	Daily Total
24-Jun	10.1	42.5	32.4	8.4	0.0	2.8	0.6	0.0	0.6	0.0	0.0	2.8	100.2
25-Jun	5.8	30.9	55.0	4.5	1.9	0.6	0.4	0.6	0.0	0.0	0.0	0.4	100.1
26-Jun	5.8	31.1	56.6	4.3	0.9	0.3	0.0	0.0	0.6	0.3	0.0	0.0	99.9
27-Jun	42.9	19.6	27.0	6.5	2.3	0.7	0.2	0.0	0.0	0.0	0.0	0.7	99.9
28-Jun	7.8	27.7	40.3	19.7	3.8	0.0	0.2	0.2	0.0	0.0	0.2	0.0	99.9
29-Jun	7.8	23.8	54.0	10.5	1.9	0.6	0.3	0.2	0.0	0.0	0.0	0.8	99.9
30-Jun	11.1	41.6	43.5	2.7	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.4	100.1
01-Jul	5.8	26.8	55.4	8.3	1.1	0.4	0.7	0.4	0.2	0.2	0.2	0.4	99.9
02-Jul	6.6	36.6	35.4	12.1	4.7	2.8	1.3	0.2	0.2	0.0	0.0	0.1	100.0
03-Jul	2.8	36.1	34.3	15.2	8.0	2.0	0.7	0.5	0.2	0.2	0.0	0.0	100.0
04-Jul	6.4	49.9	26.4	11.1	2.3	1.2	1.1	0.5	0.3	0.6	0.2	0.0	100.0
05-Jul	4.9	48.9	25.1	12.8	5.3	1.4	0.3	0.5	0.5	0.1	0.0	0.1	99.9
06-Jul	9.0	35.9	31.0	16.1	4.4	1.6	0.7	0.6	0.4	0.3	0.0	0.0	100.0
07-Jul	8.4	27.0	42.9	10.3	5.7	2.4	1.2	0.8	0.9	0.2	0.2	0.3	100.3
08-Jul	5.3	22.1	48.4	14.7	6.6	1.6	0.5	0.4	0.3	0.0	0.0	0.0	99.9
09-Jul	7.3	19.3	40.4	22.7	7.4	1.2	1.2	0.2	0.2	0.2	0.1	0.0	100.2
10-Jul	3.4	13.9	51.4	22.9	4.5	2.2	0.9	0.2	0.4	0.1	0.0	0.0	99.9
11-Jul	3.3	15.4	50.3	18.7	6.3	4.4	0.7	0.2	0.2	0.1	0.2	0.0	99.8
12-Jul	1.5	11.6	50.0	23.6	8.6	3.1	0.7	0.2	0.4	0.2	0.0	0.0	99.9
13-Jul	2.1	13.0	48.3	20.9	7.1	4.2	1.7	0.4	1.3	0.5	0.2	0.2	99.9
14-Jul	4.8	19.7	39.1	15.0	9.2	5.4	3.5	0.8	1.4	0.7	0.4	0.1	100.1
15-Jul	12.2	34.0	36.0	9.3	4.1	1.6	0.7	0.4	0.7	0.4	0.4	0.3	100.1
16-Jul	14.6	36.7	26.7	8.6	4.0	0.8	0.4	0.9	3.1	2.2	1.5	0.7	100.2
17-Jul	10.7	57.3	24.4	4.1	0.5	0.2	0.0	0.0	0.4	0.9	0.9	0.5	99.9
18-Jul	7.8	53.0	29.1	4.0	0.7	0.3	0.0	0.2	0.5	2.3	1.5	0.6	100.0
19-Jul	9.6	36.2	24.0	2.9	0.2	2.2	1.3	1.3	3.8	8.7	7.6	2.3	100.1
20-Jul	9.0	34.9	25.5	3.1	0.9	1.8	1.5	1.7	3.6	6.5	6.7	5.0	100.2
21-Jul	8.0	30.4	26.8	6.9	1.8	1.8	1.8	1.9	1.9	5.0	9.3	4.6	100.2
22-Jul	9.3	37.2	24.7	6.0	2.2	1.7	0.8	1.4	2.0	5.6	5.3	4.0	100.2
23-Jul	6.8	35.4	30.3	6.6	2.5	1.4	1.2	1.9	2.3	4.0	4.9	2.6	99.9
24-Jul	6.2	38.7	34.5	5.2	1.5	1.4	0.9	1.6	2.3	3.4	3.2	1.0	99.9
25-Jul	9.5	42.1	29.3	7.0	2.2	1.8	1.8	1.7	0.8	1.9	1.7	0.3	100.1
26-Jul	7.4	49.8	30.9	6.8	1.4	1.0	0.2	0.1	0.1	1.0	1.1	0.2	100.0
27-Jul	5.9	47.4	36.9	5.4	1.5	0.7	0.3	0.3	0.3	0.7	0.7	0.1	100.2
28-Jul	5.7	49.0	37.4	5.6	0.7	0.4	0.3	0.1	0.3	0.1	0.4	0.1	100.1
29-Jul	5.6	40.7	44.2	7.1	1.3	0.3	0.2	0.1	0.1	0.2	0.3	0.0	100.1
30-Jul	7.2	50.1	34.1	6.2	0.6	0.5	0.6	0.2	0.1	0.3	0.2	0.0	100.1
31-Jul	7.5	38.9	42.3	7.6	1.4	0.3	0.4	0.6	0.2	0.1	0.5	0.3	100.1
01-Aug	8.9	44.1	34.5	6.5	2.5	0.3	0.6	0.2	0.9	0.8	0.2	0.7	100.2
02-Aug	7.0	33.6	37.3	12.5	4.0	0.2	1.3	1.2	0.9	1.3	0.2	0.4	99.9
03-Aug	10.0	34.2	37.0	11.3	1.8	0.6	0.8	1.1	0.6	0.8	1.1	0.7	100.0
04-Aug	15.7	23.4	32.5	17.0	3.1	0.9	2.1	1.9	1.2	1.0	0.3	0.7	99.8
05-Aug	11.1	26.9	43.0	11.3	3.0	1.8	0.8	0.4	0.4	0.8	0.4	0.1	100.0
Total	6.9	32.2	38.0	12.5	4.1	1.8	0.8	0.5	0.8	1.0	1.0	0.5	100.1

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Appendix A.30. Crescent River south bank sonar counts by sector, 24 June through 5 August 1997. Counts expressed as percentage of daily total.

	Counts by Sector												
Date	1	2	3	4	5	6	7	8	9	10	11	12	Daily Total
24-Jun	96.9	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
25-Jun	96.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
26-Jun	96.7	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
27-Jun	92.7	7.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
28-Jun	91.4	8.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
29-Jun	96.6	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
30-Jun	94.1	5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
01-Jul	99.6	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
02-Jul	98.4	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
03-Jul	96.8	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
04-Jul	97.7	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
05-Jul	94.2	5.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
06-Jul	96.9	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
07-Jul	94.4	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
08-Jul	93.4	6.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
09-Jul	92.6	7.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
10-Jul	99.6	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
11-Jul	99.3	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
12-Jul	97.3	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
13-Jul	95.6	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
14-Jul	97.2	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
15-Jul	94.3	5.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
16-Jul	89.6	10.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
17-Jul	99.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
18-Jul	99.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
19-Jul	98.3	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
20-Jul	98.9	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
21-Jul	98.1	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
22-Jul	97.1	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
23-Jul	98.6	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
24-Jul	99.6	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
25-Jul	98.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
26-Jul	98.8	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
27-Jul	96.9	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
28-Jul	95.8	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
29-Jul	97.9	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
30-Jul	95.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
31-Jul	97.1	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
01-Aug	97.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
02-Aug	96.2	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
03-Aug	97.1	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
04-Aug	97.1	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
05-Aug	98.3	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Total	96.9	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0

FN: 97CR2SP.xls

Appendix A.31. Estimated salmon escapement adjacent to the north bank of the Yentna River, 6 July through 12 August 1997. Species composition of daily sonar counts based on fish wheel catches.

	Sockeye		Pink		Chum		Coho		Chinook	
Date	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
06-Jul	139	139	75	75	1	1	6	6	10	10
07-Jul	78	217	42	117	1	2	3	9	6	16
08-Jul	127	344	68	185	1	3	6	15	9	25
09-Jul	99	443	53	238	1	4	4	19	7	32
10-Jul	111	554	59	297	1	5	5	24	8	40
11-Jul	235	789	126	423	2	7	10	34	17	57
12-Jul	186	975	99	522	2	9	7	41	14	71
13-Jul	412	1,387	69	591	7	16	17	58	7	78
14-Jul	719	2,106	121	712	12	28	29	87	13	91
15-Jul	616	2,722	95	807	12	40	15	102	3	94
16-Jul	1,095	3,817	170	977	22	62	27	129	4	98
17-Jul	1,066	4,883	165	1,142	22	84	26	155	4	102
18-Jul	598	5,481	240	1,382	51	135	21	176	0	102
19-Jul	884	6,365	355	1,737	75	210	31	207	0	102
20-Jul	379	6,744	208	1,945	46	256	68	275	0	102
21-Jul	302	7,046	166	2,111	36	292	55	330	0	102
22-Jul	567	7,613	416	2,527	128	420	53	383	0	102
23-Jul	630	8,243	495	3,022	107	527	17	400	0	102
24-Jul	1,380	9,623	646	3,668	305	832	116	516	9	111
25-Jul	1,616	11,239	856	4,524	570	1,402	462	978	0	111
26-Jul	1,298	12,537	749	5,273	413	1,815	245	1,223	8	119
27-Jul	537	13,074	428	5,701	167	1,982	123	1,346	0	119
28-Jul	386	13,460	426	6,127	246	2,228	123	1,469	0	119
29-Jul	381	13,841	817	6,944	281	2,509	106	1,575	0	119
30-Jul	429	14,270	1,002	7,946	369	2,878	180	1,755	0	119
31-Jul	273	14,543	531	8,477	140	3,018	38	1,793	0	119
01-Aug	225	14,768	438	8,915	116	3,134	31	1,824	0	119
02-Aug	297	15,065	383	9,298	130	3,264	102	1,926	4	123
03-Aug	220	15,285	282	9,580	97	3,361	75	2,001	3	126
04-Aug	217	15,502	325	9,905	116	3,477	38	2,039	0	126
05-Aug	320	15,822	478	10,383	170	3,647	56	2,095	0	126
06-Aug	152	15,974	148	10,531	46	3,693	28	2,123	0	126
07-Aug	179	16,153	175	10,706	54	3,747	33	2,156	0	126
08-Aug	188	16,341	183	10,889	47	3,794	28	2,184	0	126
09-Aug	273	16,614	264	11,153	68	3,862	40	2,224	0	126
10-Aug	366	16,980	289	11,442	86	3,948	54	2,278	0	126
11-Aug	440	17,420	489	11,931	97	4,045	39	2,317	0	126
12-Aug	415	17,835	71	12,002	31	4,076	17	2,334	0	126

FN: 97YE1C.XLS

Appendix A.32. Estimated salmon escapement adjacent to the south bank of the Yentna River, 6 July through 12 August 1997. Species composition of daily sonar counts based on fish wheel catches.

	Sockeye		Pink		Chum		Coho		Chinook	
Date	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
06-Jul	223	223	51	51	0	0	3	3	11	11
07-Jul	218	441	50	101	0	0	3	6	11	22
08-Jul	237	678	54	155	0	0	3	9	12	34
09-Jul	249	927	99	254	2	2	10	19	10	44
10-Jul	253	1,180	101	355	2	4	10	29	10	54
11-Jul	85	1,265	34	389	0	4	4	33	3	57
12-Jul	249	1,514	39	428	1	5	13	46	2	59
13-Jul	1,906	3,420	64	492	8	13	51	97	0	59
14-Jul	8,245	11,665	182	674	0	13	59	156	0	59
15-Jul	9,182	20,847	188	862	81	94	27	183	0	59
16-Jul	6,427	27,274	177	1,039	0	94	176	359	0	59
17-Jul	4,043	31,317	121	1,160	30	124	417	776	0	59
18-Jul	3,335	34,652	108	1,268	81	205	154	930	0	59
19-Jul	3,134	37,786	267	1,535	110	315	222	1,152	0	59
20-Jul	5,263	43,049	148	1,683	51	366	464	1,616	0	59
21-Jul	7,854	50,903	279	1,962	37	403	388	2,004	0	59
22-Jul	9,924	60,827	893	2,855	210	613	342	2,346	0	59
23-Jul	8,648	69,475	498	3,353	183	796	587	2,933	0	59
24-Jul	6,804	76,279	411	3,764	255	1,051	466	3,399	0	59
25-Jul	8,191	84,470	429	4,193	429	1,480	864	4,263	0	59
26-Jul	8,459	92,929	606	4,799	300	1,780	704	4,967	0	59
27-Jul	3,952	96,881	822	5,621	941	2,721	467	5,434	39	98
28-Jul	3,667	100,548	794	6,415	413	3,134	438	5,872	0	98
29-Jul	2,918	103,466	1,774	8,189	630	3,764	402	6,274	0	98
30-Jul	3,366	106,832	1,333	9,522	335	4,099	593	6,867	0	98
31-Jul	4,130	110,962	932	10,454	466	4,565	429	7,296	0	98
01-Aug	4,677	115,639	965	11,419	527	5,092	607	7,903	0	98
02-Aug	3,759	119,398	649	12,068	216	5,308	598	8,501	50	148
03-Aug	2,679	122,077	1,168	13,236	318	5,626	755	9,256	0	148
04-Aug	3,412	125,489	1,064	14,300	807	6,433	257	9,513	0	148
05-Aug	2,433	127,922	706	15,006	607	7,040	560	10,073	23	171
06-Aug	1,764	129,686	643	15,649	368	7,408	422	10,495	0	171
07-Aug	1,112	130,798	419	16,068	204	7,612	176	10,671	0	171
08-Aug	1,982	132,780	176	16,244	302	7,914	105	10,776	0	171
09-Aug	2,238	135,018	153	16,397	94	8,008	118	10,894	0	171
10-Aug	2,905	137,923	375	16,772	146	8,154	252	11,146	0	171
11-Aug	1,226	139,149	178	16,950	352	8,506	152	11,298	0	171
12-Aug	838	139,987	8	16,958	89	8,595	38	11,336	0	171

FN: 97YE2C.XLS

Appendix A.33. Yentna River north bank sonar counts by hour, 6 July through 12 August 1997.

Date	Counts by Hour																							Daily Total	Cum Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
6-Jul	32	4	1	15	9	3	24	3	12	15	2	5	0	8	3	6	17	10	37	8	4	1	1	10	230	230
7-Jul	12	10	13	3	1	3	4	1	13	6	4	9	12	5	3	5	4	1	6	1	2	2	7	3	130	360
8-Jul	0	11	2	4	4	9	15	11	7	2	2	5	1	4	1	3	11	15	10	19	40	12	17	5	210	570
9-Jul	4	3	15	1	5	2	5	2	1	3	0	1	5	3	2	14	1	10	1	16	1	19	9	41	164	734
10-Jul	10	10	3	6	0	8	3	1	1	16	2	55	4	4	5	4	4	2	9	1	10	4	4	16	182	916
11-Jul	26	16	2	13	1	1	1	2	1	2	8	12	12	71	15	13	13	31	49	2	38	0	6	23	358	1,274
12-Jul	15	8	19	20	11	20	5	6	20	7	14	12	12	5	22	28	13	5	20	8	4	7	10	15	306	1,580
13-Jul	31	16	0	6	11	27	22	4	10	7	36	26	30	18	12	21	19	15	39	16	38	16	57	35	512	2,092
14-Jul	87	45	20	28	60	53	19	50	51	15	33	57	30	27	52	35	45	28	37	30	11	57	18	5	893	2,985
15-Jul	11	45	11	16	31	9	20	9	36	17	81	5	7	25	37	69	52	9	41	22	15	34	46	92	740	3,725
16-Jul	102	74	82	38	40	33	39	20	56	71	78	85	176	41	40	52	22	36	31	27	68	40	41	26	1,318	5,043
17-Jul	64	37	89	48	37	35	38	42	52	26	41	21	35	27	54	54	31	66	86	72	57	67	60	145	1,284	6,327
18-Jul	69	62	42	55	34	38	23	33	23	47	55	25	25	11	25	54	26	52	24	37	58	36	13	43	910	7,237
19-Jul	15	33	27	30	33	30	47	14	30	58	37	67	69	84	83	44	82	77	95	91	80	102	92	25	1,345	8,582
20-Jul	77	44	84	67	64	35	31	10	18	27	31	30	6	12	35	12	22	8	6	40	4	26	9	2	700	9,282
21-Jul	5	2	19	3	18	1	13	25	10	56	32	30	32	35	60	45	26	21	20	22	13	24	20	27	559	9,841
22-Jul	140	32	35	60	18	26	48	31	35	27	63	39	34	89	46	78	33	70	102	39	40	32	36	11	1,164	11,005
23-Jul	17	16	15	24	11	16	19	20	6	39	51	71	35	35	73	101	72	89	63	88	64	108	113	97	1,243	12,248
24-Jul	74	89	69	53	43	50	73	76	108	80	95	150	121	84	63	97	84	217	158	135	84	232	81	140	2,456	14,704
25-Jul	54	46	85	82	41	64	66	35	33	49	71	137	213	87	268	192	150	186	204	234	330	164	318	395	3,504	18,208
26-Jul	114	104	131	104	167	144	71	174	149	99	111	107	163	113	69	88	101	136	115	110	81	120	78	64	2,713	20,921
27-Jul	42	36	29	14	30	20	30	20	44	68	54	41	43	45	65	79	92	80	108	94	66	58	59	38	1,255	22,176
28-Jul	44	34	24	28	42	18	33	19	29	27	43	23	35	34	77	86	70	92	92	127	111	42	29	22	1,181	23,357
29-Jul	13	9	9	15	12	3	22	19	32	2	33	75	89	104	142	124	91	137	65	128	143	84	119	116	1,586	24,943
30-Jul	146	95	66	62	60	57	30	51	27	108	96	100	67	62	97	107	89	68	91	127	130	85	63	97	1,981	26,924
31-Jul	52	42	42	36	32	37	28	32	30	39	32	55	73	28	31	32	49	54	41	62	71	15	39	29	981	27,905
1-Aug	28	53	17	31	21	35	29	32	7	14	47	55	94	113	35	24	22	21	37	15	28	27	17	12	814	28,719
2-Aug	34	14	8	9	20	16	18	20	10	12	13	41	39	20	61	78	60	57	51	112	54	62	69	40	918	29,637
3-Aug	23	24	22	12	15	15	14	13	33	21	24	11	42	43	20	32	52	50	41	71	14	35	24	26	677	30,314
4-Aug	27	15	15	5	13	17	15	17	21	21	9	16	13	11	29	39	37	49	50	31	65	75	43	62	695	31,009

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Appendix A.33. (p.2 of 2)

	Counts by Hour																								
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total	Cum Total
5-Aug	66	33	45	45	51	16	18	42	43	35	56	36	31	33	53	60	27	72	65	35	53	43	27	39	1,024	32,033
6-Aug	31	24	3	8	23	7	5	1	7	10	16	27	34	17	33	19	10	29	26	17	5	3	17	2	374	32,407
7-Aug	16	6	16	9	5	4	9	3	7	16	30	12	16	22	21	27	37	38	19	26	20	38	12	32	441	32,848
8-Aug	26	8	19	7	19	23	9	6	31	10	13	25	17	16	28	27	9	22	30	36	10	14	11	30	446	33,294
9-Aug	39	8	7	10	4	7	17	26	15	17	35	23	4	22	42	25	20	28	73	76	37	51	39	20	645	33,939
10-Aug	18	32	17	13	14	5	14	15	18	20	27	21	36	64	12	80	54	48	67	39	72	58	38	13	795	34,734
11-Aug	26	13	4	14	5	42	38	9	1	137	30	45	104	44	34	117	46	71	39	74	41	33	64	27	1,058	35,792
12-Aug	26	32	42	45	20	33	31	18	22	33	9	55	22	36	42	23	22	15	10	0	0	0	0	0	536	36,328
Total	1,616	1,185	1,149	1,039	1,025	962	946	912	1,049	1,259	1,414	1,610	1,781	1,502	1,790	1,994	1,615	2,015	2,058	2,088	1,962	1,826	1,706	1,825	36,328	

Appendix A.34. Yentna River south bank sonar counts by hour, 6 July through 12 August 1997.

	Counts by Hour																								
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total	Cum Total
6-Jul	1	14	9	11	19	17	19	15	16	12	16	11	24	31	13	12	16	3	2	5	3	5	10	4	288	288
7-Jul	7	10	18	5	1	3	2	7	3	1	3	8	2	1	7	4	21	14	12	9	10	6	6	40	200	488
8-Jul	25	4	5	10	6	5	1	7	5	2	18	11	1	14	22	12	5	11	13	8	9	4	9	16	223	711
9-Jul	8	35	6	11	4	3	10	8	9	24	7	27	2	3	20	7	11	6	20	2	17	7	1	14	262	973
10-Jul	1	17	9	7	6	48	11	9	14	15	11	58	25	0	0	25	1	1	2	0	2	2	2	0	266	1,239
11-Jul	2	1	0	3	0	1	0	1	1	2	0	3	1	8	1	3	3	13	4	5	6	3	2	26	89	1,328
12-Jul	7	6	5	4	1	8	3	5	3	3	11	10	2	15	2	8	19	10	22	15	12	3	15	27	216	1,544
13-Jul	15	29	29	52	36	52	34	46	23	28	17	36	59	47	79	90	102	95	100	96	87	69	67	152	1,440	2,984
14-Jul	174	259	301	264	258	218	156	249	215	215	176	135	107	144	186	208	320	346	329	170	272	418	474	433	6,027	9,011
15-Jul	220	374	383	377	298	352	292	154	187	267	282	400	240	376	289	305	224	255	291	231	207	235	141	170	6,550	15,561
16-Jul	584	481	298	328	282	260	272	329	93	328	373	211	295	320	232	241	230	298	347	171	121	298	264	120	6,776	22,337
17-Jul	161	192	192	147	189	182	130	166	136	104	148	86	104	102	111	306	335	264	249	305	334	353	202	112	4,610	26,947
18-Jul	201	460	135	172	180	154	107	246	175	204	191	171	169	172	157	110	69	92	49	143	92	85	71	73	3,678	30,625
19-Jul	152	102	120	129	120	126	179	185	170	117	148	150	101	138	169	317	226	200	189	186	77	114	163	155	3,733	34,358
20-Jul	182	198	241	263	238	230	252	272	110	147	166	193	218	211	251	369	361	328	254	198	290	382	269	303	5,926	40,284
21-Jul	282	364	360	359	394	495	286	300	208	181	166	241	296	404	340	284	314	367	403	338	461	544	533	638	8,558	48,842
22-Jul	709	581	535	548	609	612	476	417	483	478	423	461	309	370	504	406	585	513	383	265	273	413	510	506	11,369	60,211
23-Jul	433	562	654	557	611	397	474	361	322	364	308	368	268	397	382	481	354	359	400	284	245	363	460	512	9,916	70,127
24-Jul	336	418	436	370	321	512	354	279	347	368	346	350	362	258	335	372	305	312	271	225	176	244	326	313	7,936	78,063
25-Jul	307	324	341	408	367	469	413	370	376	365	438	408	337	317	365	419	473	513	395	473	598	483	490	464	9,913	87,976
26-Jul	283	246	224	217	221	230	169	194	182	286	269	162	176	224	259	245	231	266	313	250	291	211	224	351	5,724	93,700
27-Jul	549	556	424	619	488	431	398	474	297	454	361	368	466	333	530	488	524	440	281	270	377	311	324	306	10,069	103,769
28-Jul	305	236	212	275	244	317	219	222	252	216	221	253	263	251	328	371	261	343	284	192	211	241	240	264	6,221	109,990
29-Jul	299	310	326	295	296	237	277	192	228	283	218	188	186	120	179	131	201	188	182	160	172	214	177	253	5,312	115,302
30-Jul	259	241	265	246	224	236	170	184	177	247	195	300	203	154	190	285	261	214	196	237	258	260	298	327	5,627	120,929
31-Jul	328	291	245	241	286	242	239	255	195	286	238	282	298	242	188	237	195	266	242	269	198	202	220	272	5,957	126,886
1-Aug	268	246	304	258	222	215	262	260	213	307	207	173	311	302	330	338	341	297	242	379	353	386	302	260	6,776	133,662
2-Aug	241	280	395	296	198	204	187	207	184	201	159	205	172	230	242	161	241	160	200	199	236	271	200	203	5,272	138,934
3-Aug	239	204	217	206	175	189	170	147	168	175	243	240	185	182	209	166	185	171	282	255	235	245	204	228	4,920	143,854
4-Aug	217	266	288	247	223	166	193	221	225	258	257	278	206	280	227	158	229	224	211	223	225	180	289	250	5,541	149,395

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Appendix A.34. (p.2 of 2)

Date	Counts by Hour																							Daily Total	Cum Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
5-Aug	253	270	178	246	207	158	152	174	222	158	164	194	216	188	171	195	170	112	107	167	141	166	166	154	4,329	153,724
6-Aug	194	266	190	170	278	264	212	146	143	113	109	83	104	114	96	62	85	106	75	111	61	65	54	96	3,197	156,921
7-Aug	84	66	59	54	47	77	90	82	87	74	85	91	100	80	73	106	76	89	85	68	79	72	99	88	1,911	158,832
8-Aug	88	124	146	121	123	200	122	112	115	123	143	92	74	118	90	96	104	83	79	64	83	90	78	97	2,565	161,397
9-Aug	118	103	102	95	108	81	113	91	140	103	91	101	116	93	61	78	88	81	140	141	122	131	150	156	2,603	164,000
10-Aug	202	199	183	171	192	285	262	205	143	155	148	148	106	111	140	117	166	110	110	97	79	103	136	110	3,678	167,678
11-Aug	157	166	130	151	117	113	112	95	139	66	72	63	76	63	58	69	61	41	40	21	12	37	23	26	1,908	169,586
12-Aug	25	40	21	23	19	23	16	24	7	17	26	16	107	31	45	59	84	50	57	66	61	49	46	61	973	170,559
Total	7,916	8,541	7,986	7,956	7,608	7,812	6,834	6,711	6,013	6,747	6,454	6,575	6,287	6,444	6,881	7,341	7,477	7,241	6,861	6,298	6,486	7,265	7,245	7,580	170,559	

Appendix A.35. Yentna River north bank sonar counts by hour, 6 July through 12 August 1997. Counts expressed as percentage of daily total.

	Counts by Hour																							
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total
6-Jul	13.9	1.7	0.4	6.5	3.9	1.3	10.4	1.3	5.2	6.5	0.9	2.2	0.0	3.5	1.3	2.6	7.4	4.3	16.1	3.5	1.7	0.4	0.4	4.3	99.7
7-Jul	9.2	7.7	10.0	2.3	0.8	2.3	3.1	0.8	10.0	4.6	3.1	6.9	9.2	3.8	2.3	3.8	3.1	0.8	4.6	0.8	1.5	1.5	5.4	2.3	99.9
8-Jul	0.0	5.2	1.0	1.9	1.9	4.3	7.1	5.2	3.3	1.0	1.0	2.4	0.5	1.9	0.5	1.4	5.2	7.1	4.8	9.0	19.0	5.7	8.1	2.4	99.9
9-Jul	2.4	1.8	9.1	0.6	3.0	1.2	3.0	1.2	0.6	1.8	0.0	0.6	3.0	1.8	1.2	8.5	0.6	6.1	0.6	9.8	0.6	11.6	5.5	25.0	99.6
10-Jul	5.5	5.5	1.6	3.3	0.0	4.4	1.6	0.5	0.5	8.8	1.1	30.2	2.2	2.2	2.7	2.2	2.2	1.1	4.9	0.5	5.5	2.2	2.2	8.8	99.7
11-Jul	7.3	4.5	0.6	3.6	0.3	0.3	0.3	0.6	0.3	0.6	2.2	3.4	3.4	19.8	4.2	3.6	3.6	8.7	13.7	0.6	10.6	0.0	1.7	6.4	100.3
12-Jul	4.9	2.6	6.2	6.5	3.6	6.5	1.6	2.0	6.5	2.3	4.6	3.9	3.9	1.6	7.2	9.2	4.2	1.6	6.5	2.6	1.3	2.3	3.3	4.9	99.8
13-Jul	6.1	3.1	0.0	1.2	2.1	5.3	4.3	0.8	2.0	1.4	7.0	5.1	5.9	3.5	2.3	4.1	3.7	2.9	7.6	3.1	7.4	3.1	11.1	6.8	99.9
14-Jul	9.7	5.0	2.2	3.1	6.7	5.9	2.1	5.6	5.7	1.7	3.7	6.4	3.4	3.0	5.8	3.9	5.0	3.1	4.1	3.4	1.2	6.4	2.0	0.6	99.7
15-Jul	1.5	6.1	1.5	2.2	4.2	1.2	2.7	1.2	4.9	2.3	10.9	0.7	0.9	3.4	5.0	9.3	7.0	1.2	5.5	3.0	2.0	4.6	6.2	12.4	99.9
16-Jul	7.7	5.6	6.2	2.9	3.0	2.5	3.0	1.5	4.2	5.4	5.9	6.4	13.4	3.1	3.0	3.9	1.7	2.7	2.4	2.0	5.2	3.0	3.1	2.0	99.8
17-Jul	5.0	2.9	6.9	3.7	2.9	2.7	3.0	3.3	4.0	2.0	3.2	1.6	2.7	2.1	4.2	4.2	2.4	5.1	6.7	5.6	4.4	5.2	4.7	11.3	99.8
18-Jul	7.6	6.8	4.6	6.0	3.7	4.2	2.5	3.6	2.5	5.2	6.0	2.7	2.7	1.2	2.7	5.9	2.9	5.7	2.6	4.1	6.4	4.0	1.4	4.7	99.7
19-Jul	1.1	2.5	2.0	2.2	2.5	2.2	3.5	1.0	2.2	4.3	2.8	5.0	5.1	6.2	6.2	3.3	6.1	5.7	7.1	6.8	5.9	7.6	6.8	1.9	100.0
20-Jul	11.0	6.3	12.0	9.6	9.1	5.0	4.4	1.4	2.6	3.9	4.4	4.3	0.9	1.7	5.0	1.7	3.1	1.1	0.9	5.7	0.6	3.7	1.3	0.3	100.0
21-Jul	0.9	0.4	3.4	0.5	3.2	0.2	2.3	4.5	1.8	10.0	5.7	5.4	5.7	6.3	10.7	8.1	4.7	3.8	3.6	3.9	2.3	4.3	3.6	4.8	100.1
22-Jul	12.0	2.7	3.0	5.2	1.5	2.2	4.1	2.7	3.0	2.3	5.4	3.4	2.9	7.6	4.0	6.7	2.8	6.0	8.8	3.4	3.4	2.7	3.1	0.9	99.8
23-Jul	1.4	1.3	1.2	1.9	0.9	1.3	1.5	1.6	0.5	3.1	4.1	5.7	2.8	2.8	5.9	8.1	5.8	7.2	5.1	7.1	5.1	8.7	9.1	7.8	100.0
24-Jul	3.0	3.6	2.8	2.2	1.8	2.0	3.0	3.1	4.4	3.3	3.9	6.1	4.9	3.4	2.6	3.9	3.4	8.8	6.4	5.5	3.4	9.4	3.3	5.7	99.9
25-Jul	1.5	1.3	2.4	2.3	1.2	1.8	1.9	1.0	0.9	1.4	2.0	3.9	6.1	2.5	7.6	5.5	4.3	5.3	5.8	6.7	9.4	4.7	9.1	11.3	99.9
26-Jul	4.2	3.8	4.8	3.8	6.2	5.3	2.6	6.4	5.5	3.6	4.1	3.9	6.0	4.2	2.5	3.2	3.7	5.0	4.2	4.1	3.0	4.4	2.9	2.4	99.8
27-Jul	3.3	2.9	2.3	1.1	2.4	1.6	2.4	1.6	3.5	5.4	4.3	3.3	3.4	3.6	5.2	6.3	7.3	6.4	8.6	7.5	5.3	4.6	4.7	3.0	100.0
28-Jul	3.7	2.9	2.0	2.4	3.6	1.5	2.8	1.6	2.5	2.3	3.6	1.9	3.0	2.9	6.5	7.3	5.9	7.8	7.8	10.8	9.4	3.6	2.5	1.9	100.2
29-Jul	0.8	0.6	0.6	0.9	0.8	0.2	1.4	1.2	2.0	0.1	2.1	4.7	5.6	6.6	9.0	7.8	5.7	8.6	4.1	8.1	9.0	5.3	7.5	7.3	100.0
30-Jul	7.4	4.8	3.3	3.1	3.0	2.9	1.5	2.6	1.4	5.5	4.8	5.0	3.4	3.1	4.9	5.4	4.5	3.4	4.6	6.4	6.6	4.3	3.2	4.9	100.0

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Appendix A.35. (p.2 of 2)

Date	Counts by Hour																							Daily Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
31-Jul	5.3	4.3	4.3	3.7	3.3	3.8	2.9	3.3	3.1	4.0	3.3	5.6	7.4	2.9	3.2	3.3	5.0	5.5	4.2	6.3	7.2	1.5	4.0	3.0	100.4
1-Aug	3.4	6.5	2.1	3.8	2.6	4.3	3.6	3.9	0.9	1.7	5.8	6.8	11.5	13.9	4.3	2.9	2.7	2.6	4.5	1.8	3.4	3.3	2.1	1.5	99.9
2-Aug	3.7	1.5	0.9	1.0	2.2	1.7	2.0	2.2	1.1	1.3	1.4	4.5	4.2	2.2	6.6	8.5	6.5	6.2	5.6	12.2	5.9	6.8	7.5	4.4	100.1
3-Aug	3.4	3.5	3.2	1.8	2.2	2.2	2.1	1.9	4.9	3.1	3.5	1.6	6.2	6.4	3.0	4.7	7.7	7.4	6.1	10.5	2.1	5.2	3.5	3.8	100.0
4-Aug	3.9	2.2	2.2	0.7	1.9	2.4	2.2	2.4	3.0	3.0	1.3	2.3	1.9	1.6	4.2	5.6	5.3	7.1	7.2	4.5	9.4	10.8	6.2	8.9	100.2
5-Aug	6.4	3.2	4.4	4.4	5.0	1.6	1.8	4.1	4.2	3.4	5.5	3.5	3.0	3.2	5.2	5.9	2.6	7.0	6.3	3.4	5.2	4.2	2.6	3.8	99.9
6-Aug	8.3	6.4	0.8	2.1	6.1	1.9	1.3	0.3	1.9	2.7	4.3	7.2	9.1	4.5	8.8	5.1	2.7	7.8	7.0	4.5	1.3	0.8	4.5	0.5	99.9
7-Aug	3.6	1.4	3.6	2.0	1.1	0.9	2.0	0.7	1.6	3.6	6.8	2.7	3.6	5.0	4.8	6.1	8.4	8.6	4.3	5.9	4.5	8.6	2.7	7.3	99.8
8-Aug	5.8	1.8	4.3	1.6	4.3	5.2	2.0	1.3	7.0	2.2	2.9	5.6	3.8	3.6	6.3	6.1	2.0	4.9	6.7	8.1	2.2	3.1	2.5	6.7	100.0
9-Aug	6.0	1.2	1.1	1.6	0.6	1.1	2.6	4.0	2.3	2.6	5.4	3.6	0.6	3.4	6.5	3.9	3.1	4.3	11.3	11.8	5.7	7.9	6.0	3.1	99.7
10-Aug	2.3	4.0	2.1	1.6	1.8	0.6	1.8	1.9	2.3	2.5	3.4	2.6	4.5	8.1	1.5	10.1	6.8	6.0	8.4	4.9	9.1	7.3	4.8	1.6	100.0
11-Aug	2.5	1.2	0.4	1.3	0.5	4.0	3.6	0.9	0.1	12.9	2.8	4.3	9.8	4.2	3.2	11.1	4.3	6.7	3.7	7.0	3.9	3.1	6.0	2.6	100.1
12-Aug	4.9	6.0	7.8	8.4	3.7	6.2	5.8	3.4	4.1	6.2	1.7	10.3	4.1	6.7	7.8	4.3	4.1	2.8	1.9	0.0	0.0	0.0	0.0	0.0	100.2
Total	4.4	3.3	3.2	2.9	2.8	2.6	2.6	2.5	2.9	3.5	3.9	4.4	4.9	4.1	4.9	5.5	4.4	5.5	5.7	5.7	5.4	5.0	4.7	5.0	99.8

Appendix A.36. Yentna River south bank sonar counts by hour, 6 July through 12 August 1997. Counts expressed as percentage of daily total.

Date	Counts by Hour																							Daily Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
6-Jul	0.3	1.9	3.1	3.8	6.6	5.9	6.6	5.2	5.6	4.2	5.6	3.8	8.3	10.8	4.5	4.2	5.6	1.0	0.7	1.7	1.0	1.7	3.5	1.4	100.0
7-Jul	3.5	5.0	9.0	2.5	0.5	1.5	1.0	3.5	1.5	0.5	1.5	4.0	1.0	0.5	3.5	2.0	10.5	7.0	6.0	4.5	5.0	3.0	3.0	20.0	100.0
8-Jul	11.2	1.8	2.2	4.5	2.7	2.2	0.4	3.1	2.2	0.9	8.1	4.9	0.4	6.3	9.9	5.4	2.2	4.9	5.8	3.6	4.0	1.8	4.0	7.2	99.7
9-Jul	3.1	13.4	2.3	4.2	1.5	1.1	3.8	3.1	3.4	9.2	2.7	10.3	0.8	1.1	7.6	2.7	4.2	2.3	7.6	0.8	6.5	2.7	0.4	5.3	100.1
10-Jul	0.4	6.4	3.4	2.6	2.3	18.0	4.1	3.4	5.3	5.6	4.1	21.8	9.4	0.0	0.0	9.4	0.4	0.4	0.8	0.0	0.8	0.8	0.8	0.0	100.2
11-Jul	2.2	1.1	0.0	3.4	0.0	1.1	0.0	1.1	1.1	2.2	0.0	3.4	1.1	9.0	1.1	3.4	3.4	14.6	4.5	5.6	6.7	3.4	2.2	29.2	99.8
12-Jul	3.2	2.8	2.3	1.9	0.5	3.7	1.4	2.3	1.4	1.4	5.1	4.6	0.9	6.9	0.9	3.7	8.8	4.6	10.2	6.9	5.6	1.4	6.9	12.5	99.9
13-Jul	1.0	2.0	2.0	3.6	2.5	3.6	2.4	3.2	1.6	1.9	1.2	2.5	4.1	3.3	5.5	6.3	7.1	6.6	6.9	6.7	6.0	4.8	4.7	10.6	100.1
14-Jul	2.9	4.3	5.0	4.4	4.3	3.6	2.6	4.1	3.6	3.6	2.9	2.2	1.8	2.4	3.1	3.5	5.3	5.7	5.5	2.8	4.5	6.9	7.9	7.2	100.1
15-Jul	3.4	5.7	5.8	5.8	4.5	5.4	4.5	2.4	2.9	4.1	4.3	6.1	3.7	5.7	4.4	4.7	3.4	3.9	4.4	3.5	3.2	3.6	2.2	2.6	100.2
16-Jul	8.6	7.1	4.4	4.8	4.2	3.8	4.0	4.9	1.4	4.8	5.5	3.1	4.4	4.7	3.4	3.6	3.4	4.4	5.1	2.5	1.8	4.4	3.9	1.8	100.0
17-Jul	3.5	4.2	4.2	3.2	4.1	3.9	2.8	3.6	3.0	2.3	3.2	1.9	2.3	2.2	2.4	6.6	7.3	5.7	5.4	6.6	7.2	7.7	4.4	2.4	100.1
18-Jul	5.5	12.5	3.7	4.7	4.9	4.2	2.9	6.7	4.8	5.5	5.2	4.6	4.6	4.7	4.3	3.0	1.9	2.5	1.3	3.9	2.5	2.3	1.9	2.0	100.1
19-Jul	4.1	2.7	3.2	3.5	3.2	3.4	4.8	5.0	4.6	3.1	4.0	4.0	2.7	3.7	4.5	8.5	6.1	5.4	5.1	5.0	2.1	3.1	4.4	4.2	100.4
20-Jul	3.1	3.3	4.1	4.4	4.0	3.9	4.3	4.6	1.9	2.5	2.8	3.3	3.7	3.6	4.2	6.2	6.1	5.5	4.3	3.3	4.9	6.4	4.5	5.1	100.0
21-Jul	3.3	4.3	4.2	4.2	4.6	5.8	3.3	3.5	2.4	2.1	1.9	2.8	3.5	4.7	4.0	3.3	3.7	4.3	4.7	3.9	5.4	6.4	6.2	7.5	100.0
22-Jul	6.2	5.1	4.7	4.8	5.4	5.4	4.2	3.7	4.2	4.2	3.7	4.1	2.7	3.3	4.4	3.6	5.1	4.5	3.4	2.3	2.4	3.6	4.5	4.5	100.0
23-Jul	4.4	5.7	6.6	5.6	6.2	4.0	4.8	3.6	3.2	3.7	3.1	3.7	2.7	4.0	3.9	4.9	3.6	3.6	4.0	2.9	2.5	3.7	4.6	5.2	100.2
24-Jul	4.2	5.3	5.5	4.7	4.0	6.5	4.5	3.5	4.4	4.6	4.4	4.4	4.6	3.3	4.2	4.7	3.8	3.9	3.4	2.8	2.2	3.1	4.1	3.9	100.0
25-Jul	3.1	3.3	3.4	4.1	3.7	4.7	4.2	3.7	3.8	3.7	4.4	4.1	3.4	3.2	3.7	4.2	4.8	5.2	4.0	4.8	6.0	4.9	4.9	4.7	100.0
26-Jul	5.5	5.5	4.2	6.1	4.8	4.3	4.0	4.7	2.9	4.5	3.6	3.7	4.6	3.3	5.3	4.8	5.2	4.4	2.8	2.7	3.7	3.1	3.2	3.0	99.9
27-Jul	4.9	3.8	3.4	4.4	3.9	5.1	3.5	3.6	4.1	3.5	3.6	4.1	4.2	4.0	5.3	6.0	4.2	5.5	4.6	3.1	3.4	3.9	3.9	4.2	100.2
28-Jul	5.6	5.8	6.1	5.6	5.6	4.5	5.2	3.6	4.3	5.3	4.1	3.5	3.5	2.3	3.4	2.5	3.8	3.5	3.4	3.0	3.2	4.0	3.3	4.8	99.9
29-Jul	4.9	4.3	3.9	3.8	3.9	4.0	3.0	3.4	3.2	5.0	4.7	2.8	3.1	3.9	4.5	4.3	4.0	4.6	5.5	4.4	5.1	3.7	3.9	6.1	100.0
30-Jul	4.6	4.3	4.7	4.4	4.0	4.2	3.0	3.3	3.1	4.4	3.5	5.3	3.6	2.7	3.4	5.1	4.6	3.8	3.5	4.2	4.6	4.6	5.3	5.8	100.0

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Appendix A.36. (p.2 of 2)

	Counts by Hour																							
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total
31-Jul	5.5	4.9	4.1	4.0	4.8	4.1	4.0	4.3	3.3	4.8	4.0	4.7	5.0	4.1	3.2	4.0	3.3	4.5	4.1	4.5	3.3	3.4	3.7	4.6	100.2
1-Aug	4.0	3.6	4.5	3.8	3.3	3.2	3.9	3.8	3.1	4.5	3.1	2.6	4.6	4.5	4.9	5.0	5.0	4.4	3.6	5.6	5.2	5.7	4.5	3.8	100.2
2-Aug	4.6	5.3	7.5	5.6	3.8	3.9	3.5	3.9	3.5	3.8	3.0	3.9	3.3	4.4	4.6	3.1	4.6	3.0	3.8	3.8	4.5	5.1	3.8	3.9	100.2
3-Aug	4.9	4.1	4.4	4.2	3.6	3.8	3.5	3.0	3.4	3.6	4.9	4.9	3.8	3.7	4.2	3.4	3.8	3.5	5.7	5.2	4.8	5.0	4.1	4.6	100.1
4-Aug	3.9	4.8	5.2	4.5	4.0	3.0	3.5	4.0	4.1	4.7	4.6	5.0	3.7	5.1	4.1	2.9	4.1	4.0	3.8	4.0	4.1	3.2	5.2	4.5	100.0
5-Aug	5.8	6.2	4.1	5.7	4.8	3.6	3.5	4.0	5.1	3.6	3.8	4.5	5.0	4.3	4.0	4.5	3.9	2.6	2.5	3.9	3.3	3.8	3.8	3.6	99.9
6-Aug	6.1	8.3	5.9	5.3	8.7	8.3	6.6	4.6	4.5	3.5	3.4	2.6	3.3	3.6	3.0	1.9	2.7	3.3	2.3	3.5	1.9	2.0	1.7	3.0	100.0
7-Aug	4.4	3.5	3.1	2.8	2.5	4.0	4.7	4.3	4.6	3.9	4.4	4.8	5.2	4.2	3.8	5.5	4.0	4.7	4.4	3.6	4.1	3.8	5.2	4.6	100.1
8-Aug	3.4	4.8	5.7	4.7	4.8	7.8	4.8	4.4	4.5	4.8	5.6	3.6	2.9	4.6	3.5	3.7	4.1	3.2	3.1	2.5	3.2	3.5	3.0	3.8	100.0
9-Aug	4.5	4.0	3.9	3.6	4.1	3.1	4.3	3.5	5.4	4.0	3.5	3.9	4.5	3.6	2.3	3.0	3.4	3.1	5.4	5.4	4.7	5.0	5.8	6.0	100.0
10-Aug	5.5	5.4	5.0	4.6	5.2	7.7	7.1	5.6	3.9	4.2	4.0	4.0	2.9	3.0	3.8	3.2	4.5	3.0	3.0	2.6	2.1	2.8	3.7	3.0	99.8
11-Aug	8.2	8.7	6.8	7.9	6.1	5.9	5.9	5.0	7.3	3.5	3.8	3.3	4.0	3.3	3.0	3.6	3.2	2.1	2.1	1.1	0.6	1.9	1.2	1.4	99.9
12-Aug	2.6	4.1	2.2	2.4	2.0	2.4	1.6	2.5	0.7	1.7	2.7	1.6	11.0	3.2	4.6	6.1	8.6	5.1	5.9	6.8	6.3	5.0	4.7	6.3	100.1
Total	4.6	5.0	4.7	4.7	4.5	4.6	4.0	3.9	3.5	4.0	3.8	3.9	3.7	3.8	4.0	4.3	4.4	4.2	4.0	3.7	3.8	4.3	4.2	4.4	100.0

Appendix A.37. Yentna River north bank sonar counts by sector, 6 July through 12 August 1997.

	Counts by Sector													
Date	1	2	3	4	5	6	7	8	9	10	11	12	Daily Total	Cum Total
6-Jul	23	60	61	24	15	10	33	3	0	0	0	1	230	230
7-Jul	15	54	45	7	7	0	1	1	0	0	0	0	130	360
8-Jul	19	43	87	17	10	16	11	6	0	0	1	0	210	570
9-Jul	46	49	46	5	6	1	3	3	0	0	2	3	164	734
10-Jul	53	37	34	10	7	4	28	0	2	1	1	5	182	916
11-Jul	129	64	31	25	21	33	12	6	6	10	12	9	358	1,274
12-Jul	32	50	55	67	33	17	30	5	1	10	5	1	306	1,580
13-Jul	74	31	123	153	50	23	34	11	1	8	3	1	512	2,092
14-Jul	75	274	259	151	53	31	25	15	3	6	0	1	893	2,985
15-Jul	46	237	186	186	44	13	7	14	0	0	0	7	740	3,725
16-Jul	79	459	301	249	103	38	29	28	18	12	1	1	1,318	5,043
17-Jul	109	344	289	214	155	63	49	28	9	9	5	10	1,284	6,327
18-Jul	149	184	184	153	75	67	33	24	13	13	9	6	910	7,237
19-Jul	99	352	290	189	233	55	51	34	18	12	4	8	1,345	8,582
20-Jul	76	225	160	92	62	16	17	7	4	5	0	36	700	9,282
21-Jul	54	116	131	122	107	16	10	1	0	0	0	2	559	9,841
22-Jul	79	194	285	285	153	112	40	9	3	2	1	1	1,164	11,005
23-Jul	68	346	428	153	115	68	31	23	5	4	0	2	1,243	12,248
24-Jul	92	869	767	280	242	63	68	25	24	17	4	5	2,456	14,704
25-Jul	35	958	1,269	529	388	143	97	45	11	14	5	10	3,504	18,208
26-Jul	39	839	1,044	372	233	80	44	41	13	5	2	1	2,713	20,921
27-Jul	49	287	405	167	133	68	108	25	9	1	1	2	1,255	22,176
28-Jul	42	295	395	188	113	69	51	17	4	5	1	1	1,181	23,357
29-Jul	103	226	814	293	43	27	24	19	23	5	2	7	1,586	24,943
30-Jul	100	251	991	471	45	20	26	8	67	2	0	0	1,981	26,924
31-Jul	60	120	523	200	31	8	8	5	11	15	0	0	981	27,905
1-Aug	60	183	293	127	32	29	17	13	18	6	0	36	814	28,719
2-Aug	72	168	260	144	116	70	30	20	15	10	3	10	918	29,637
3-Aug	98	132	134	94	91	60	19	19	6	11	7	6	677	30,314
4-Aug	72	127	184	107	80	75	21	9	9	6	1	4	695	31,009
5-Aug	140	287	208	144	78	96	19	16	9	5	18	4	1,024	32,033
6-Aug	110	83	73	42	24	21	6	3	4	1	4	3	374	32,407
7-Aug	100	146	60	47	28	24	10	5	3	6	5	7	441	32,848
8-Aug	77	121	68	56	47	25	16	8	4	18	6	0	446	33,294
9-Aug	123	187	122	60	39	33	26	4	7	3	26	15	645	33,939
10-Aug	81	254	155	102	61	50	19	13	4	44	7	5	795	34,734
11-Aug	206	286	243	162	95	39	9	2	16	0	0	0	1,058	35,792
12-Aug	100	87	200	115	8	2	17	2	0	0	0	5	536	36,328
Total	2,984	9,025	11,203	5,802	3,176	1,585	1,079	517	340	266	136	215	36,328	

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Appendix A.38. Yentna River south bank sonar counts by sector, 6 July through 12 August 1997.

	Counts by Sector													
Date	1	2	3	4	5	6	7	8	9	10	11	12	Daily Total	Cum Total
6-Jul	101	17	16	32	35	26	17	19	18	4	2	1	288	288
7-Jul	15	12	16	43	20	34	28	11	10	4	7	0	200	488
8-Jul	27	15	22	44	19	13	24	17	22	16	2	2	223	711
9-Jul	12	1	42	39	50	30	22	13	15	5	16	17	262	973
10-Jul	36	3	78	21	17	15	15	9	5	1	17	49	266	1,239
11-Jul	34	2	5	5	8	7	0	1	1	1	25	0	89	1,328
12-Jul	30	4	4	21	18	25	16	20	3	1	60	14	216	1,544
13-Jul	84	75	172	280	307	200	86	40	36	28	80	52	1,440	2,984
14-Jul	207	424	996	1,208	1,188	805	314	200	368	205	76	36	6,027	9,011
15-Jul	125	485	1,133	1,535	1,096	676	340	216	284	408	34	218	6,550	15,561
16-Jul	751	1,194	1,443	878	517	207	578	468	247	184	110	199	6,776	22,337
17-Jul	74	111	399	998	1,143	845	332	214	248	130	62	54	4,610	26,947
18-Jul	32	29	250	849	1,037	843	305	127	54	58	43	51	3,678	30,625
19-Jul	18	6	208	920	1,130	904	288	120	56	33	23	27	3,733	34,358
20-Jul	882	966	1,398	921	722	323	265	247	89	60	29	24	5,926	40,284
21-Jul	209	599	1,779	1,615	1,275	987	626	542	298	210	71	347	8,558	48,842
22-Jul	68	475	2,352	2,559	1,948	1,809	840	616	363	163	99	77	11,369	60,211
23-Jul	247	411	2,188	2,534	1,740	1,330	580	407	245	141	56	37	9,916	70,127
24-Jul	39	767	1,874	2,284	1,412	927	328	138	65	49	28	25	7,936	78,063
25-Jul	23	856	2,392	2,846	1,968	1,224	347	129	61	33	22	12	9,913	87,976
26-Jul	21	702	2,291	2,878	1,955	1,482	451	160	58	35	21	15	10,069	98,045
27-Jul	20	505	1,420	1,769	1,237	835	214	112	62	24	11	12	6,221	104,266
28-Jul	18	481	1,260	1,462	1,105	646	180	77	43	18	6	16	5,312	109,578
29-Jul	13	434	1,239	1,711	1,183	756	241	67	37	19	5	19	5,724	115,302
30-Jul	20	414	1,259	1,726	1,161	757	187	60	23	11	6	3	5,627	120,929
31-Jul	29	409	1,294	1,695	1,295	853	256	83	27	10	3	3	5,957	126,886
1-Aug	24	542	1,498	1,821	1,363	1,021	270	110	53	24	9	41	6,776	133,662
2-Aug	20	506	1,267	1,323	1,045	714	206	58	38	26	8	61	5,272	138,934
3-Aug	17	288	980	1,284	1,059	812	221	92	28	24	12	103	4,920	143,854
4-Aug	22	251	924	1,418	1,263	981	304	134	89	56	32	67	5,541	149,395
5-Aug	16	225	738	1,076	923	786	308	121	64	45	13	14	4,329	153,724
6-Aug	25	183	582	800	744	525	159	94	39	24	12	10	3,197	156,921
7-Aug	9	100	350	493	419	335	124	43	9	7	12	10	1,911	158,832
8-Aug	10	103	399	621	599	481	193	85	23	19	9	23	2,565	161,397
9-Aug	7	130	496	630	565	465	163	92	27	15	5	8	2,603	164,000
10-Aug	11	199	741	1,029	778	513	219	87	44	29	10	18	3,678	167,678
11-Aug	596	540	382	197	102	59	15	13	2	1	1	0	1,908	169,586
12-Aug	218	319	279	122	28	4	2	0	0	0	0	1	973	170,559
Total	4,110	12,783	34,166	41,687	32,474	23,255	9,064	5,042	3,154	2,121	1,037	1,666	170,559	

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Appendix A.39. Yentna River north bank sonar counts by sector, 6 July through 12 August 1997. Counts expressed as percent of daily total.

Date	Counts by Sector												Daily Total
	1	2	3	4	5	6	7	8	9	10	11	12	
6-Jul	10.0	26.1	26.5	10.4	6.5	4.3	14.3	1.3	0.0	0.0	0.0	0.4	99.8
7-Jul	11.5	41.5	34.6	5.4	5.4	0.0	0.8	0.8	0.0	0.0	0.0	0.0	100.0
8-Jul	9.0	20.5	41.4	8.1	4.8	7.6	5.2	2.9	0.0	0.0	0.5	0.0	100.0
9-Jul	28.0	29.9	28.0	3.0	3.7	0.6	1.8	1.8	0.0	0.0	1.2	1.8	99.8
10-Jul	29.1	20.3	18.7	5.5	3.8	2.2	15.4	0.0	1.1	0.5	0.5	2.7	99.8
11-Jul	36.0	17.9	8.7	7.0	5.9	9.2	3.4	1.7	1.7	2.8	3.4	2.5	100.2
12-Jul	10.5	16.3	18.0	21.9	10.8	5.6	9.8	1.6	0.3	3.3	1.6	0.3	100.0
13-Jul	14.5	6.1	24.0	29.9	9.8	4.5	6.6	2.1	0.2	1.6	0.6	0.2	100.1
14-Jul	8.4	30.7	29.0	16.9	5.9	3.5	2.8	1.7	0.3	0.7	0.0	0.1	100.0
15-Jul	6.2	32.0	25.1	25.1	5.9	1.8	0.9	1.9	0.0	0.0	0.0	0.9	99.8
16-Jul	6.0	34.8	22.8	18.9	7.8	2.9	2.2	2.1	1.4	0.9	0.1	0.1	100.0
17-Jul	8.5	26.8	22.5	16.7	12.1	4.9	3.8	2.2	0.7	0.7	0.4	0.8	100.1
18-Jul	16.4	20.2	20.2	16.8	8.2	7.4	3.6	2.6	1.4	1.4	1.0	0.7	99.9
19-Jul	7.4	26.2	21.6	14.1	17.3	4.1	3.8	2.5	1.3	0.9	0.3	0.6	100.1
20-Jul	10.9	32.1	22.9	13.1	8.9	2.3	2.4	1.0	0.6	0.7	0.0	5.1	100.0
21-Jul	9.7	20.8	23.4	21.8	19.1	2.9	1.8	0.2	0.0	0.0	0.0	0.4	100.1
22-Jul	6.8	16.7	24.5	24.5	13.1	9.6	3.4	0.8	0.3	0.2	0.1	0.1	100.1
23-Jul	5.5	27.8	34.4	12.3	9.3	5.5	2.5	1.9	0.4	0.3	0.0	0.2	100.1
24-Jul	3.7	35.4	31.2	11.4	9.9	2.6	2.8	1.0	1.0	0.7	0.2	0.2	100.1
25-Jul	1.0	27.3	36.2	15.1	11.1	4.1	2.8	1.3	0.3	0.4	0.1	0.3	100.0
26-Jul	1.4	30.9	38.5	13.7	8.6	2.9	1.6	1.5	0.5	0.2	0.1	0.0	99.9
27-Jul	3.9	22.9	32.3	13.3	10.6	5.4	8.6	2.0	0.7	0.1	0.1	0.2	100.1
28-Jul	3.6	25.0	33.4	15.9	9.6	5.8	4.3	1.4	0.3	0.4	0.1	0.1	99.9
29-Jul	6.5	14.2	51.3	18.5	2.7	1.7	1.5	1.2	1.5	0.3	0.1	0.4	99.9
30-Jul	5.0	12.7	50.0	23.8	2.3	1.0	1.3	0.4	3.4	0.1	0.0	0.0	100.0
31-Jul	6.1	12.2	53.3	20.4	3.2	0.8	0.8	0.5	1.1	1.5	0.0	0.0	99.9
1-Aug	7.4	22.5	36.0	15.6	3.9	3.6	2.1	1.6	2.2	0.7	0.0	4.4	100.0
2-Aug	7.8	18.3	28.3	15.7	12.6	7.6	3.3	2.2	1.6	1.1	0.3	1.1	99.9
3-Aug	14.5	19.5	19.8	13.9	13.4	8.9	2.8	2.8	0.9	1.6	1.0	0.9	100.0
4-Aug	10.4	18.3	26.5	15.4	11.5	10.8	3.0	1.3	1.3	0.9	0.1	0.6	100.1
5-Aug	13.7	28.0	20.3	14.1	7.6	9.4	1.9	1.6	0.9	0.5	1.8	0.4	100.2
6-Aug	29.4	22.2	19.5	11.2	6.4	5.6	1.6	0.8	1.1	0.3	1.1	0.8	100.0
7-Aug	22.7	33.1	13.6	10.7	6.3	5.4	2.3	1.1	0.7	1.4	1.1	1.6	100.0
8-Aug	17.3	27.1	15.2	12.6	10.5	5.6	3.6	1.8	0.9	4.0	1.3	0.0	99.9
9-Aug	19.1	29.0	18.9	9.3	6.0	5.1	4.0	0.6	1.1	0.5	4.0	2.3	99.9
10-Aug	10.2	31.9	19.5	12.8	7.7	6.3	2.4	1.6	0.5	5.5	0.9	0.6	99.9
11-Aug	19.5	27.0	23.0	15.3	9.0	3.7	0.9	0.2	1.5	0.0	0.0	0.0	100.1
12-Aug	18.7	16.2	37.3	21.5	1.5	0.4	3.2	0.4	0.0	0.0	0.0	0.9	100.1
Total	8.2	24.8	30.8	16.0	8.7	4.4	3.0	1.4	0.9	0.7	0.4	0.6	99.9

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Appendix A.40. Yentna River south bank sonar counts by sector, 6 July through 12 August 1997. Counts expressed as percent of daily total.

Date	Counts by Sector												Daily Total
	1	2	3	4	5	6	7	8	9	10	11	12	
6-Jul	35.1	5.9	5.6	11.1	12.2	9.0	5.9	6.6	6.3	1.4	0.7	0.3	100.1
7-Jul	7.5	6.0	8.0	21.5	10.0	17.0	14.0	5.5	5.0	2.0	3.5	0.0	100.0
8-Jul	12.1	6.7	9.9	19.7	8.5	5.8	10.8	7.6	9.9	7.2	0.9	0.9	100.0
9-Jul	4.6	0.4	16.0	14.9	19.1	11.5	8.4	5.0	5.7	1.9	6.1	6.5	100.1
10-Jul	13.5	1.1	29.3	7.9	6.4	5.6	5.6	3.4	1.9	0.4	6.4	18.4	99.9
11-Jul	38.2	2.2	5.6	5.6	9.0	7.9	0.0	1.1	1.1	1.1	28.1	0.0	99.9
12-Jul	13.9	1.9	1.9	9.7	8.3	11.6	7.4	9.3	1.4	0.5	27.8	6.5	100.2
13-Jul	5.8	5.2	11.9	19.4	21.3	13.9	6.0	2.8	2.5	1.9	5.6	3.6	99.9
14-Jul	3.4	7.0	16.5	20.0	19.7	13.4	5.2	3.3	6.1	3.4	1.3	0.6	99.9
15-Jul	1.9	7.4	17.3	23.4	16.7	10.3	5.2	3.3	4.3	6.2	0.5	3.3	99.8
16-Jul	11.1	17.6	21.3	13.0	7.6	3.1	8.5	6.9	3.6	2.7	1.6	2.9	99.9
17-Jul	1.6	2.4	8.7	21.6	24.8	18.3	7.2	4.6	5.4	2.8	1.3	1.2	99.9
18-Jul	0.9	0.8	6.8	23.1	28.2	22.9	8.3	3.5	1.5	1.6	1.2	1.4	100.2
19-Jul	0.5	0.2	5.6	24.6	30.3	24.2	7.7	3.2	1.5	0.9	0.6	0.7	100.0
20-Jul	14.9	16.3	23.6	15.5	12.2	5.5	4.5	4.2	1.5	1.0	0.5	0.4	100.1
21-Jul	2.4	7.0	20.8	18.9	14.9	11.5	7.3	6.3	3.5	2.5	0.8	4.1	100.0
22-Jul	0.6	4.2	20.7	22.5	17.1	15.9	7.4	5.4	3.2	1.4	0.9	0.7	100.0
23-Jul	2.5	4.1	22.1	25.6	17.5	13.4	5.8	4.1	2.5	1.4	0.6	0.4	100.0
24-Jul	0.5	9.7	23.6	28.8	17.8	11.7	4.1	1.7	0.8	0.6	0.4	0.3	100.0
25-Jul	0.2	8.6	24.1	28.7	19.9	12.3	3.5	1.3	0.6	0.3	0.2	0.1	99.8
26-Jul	0.2	7.0	22.8	28.6	19.4	14.7	4.5	1.6	0.6	0.3	0.2	0.1	100.0
27-Jul	0.3	8.1	22.8	28.4	19.9	13.4	3.4	1.8	1.0	0.4	0.2	0.2	99.9
28-Jul	0.3	9.1	23.7	27.5	20.8	12.2	3.4	1.4	0.8	0.3	0.1	0.3	99.9
29-Jul	0.2	7.6	21.6	29.9	20.7	13.2	4.2	1.2	0.6	0.3	0.1	0.3	99.9
30-Jul	0.4	7.4	22.4	30.7	20.6	13.5	3.3	1.1	0.4	0.2	0.1	0.1	100.2
31-Jul	0.5	6.9	21.7	28.5	21.7	14.3	4.3	1.4	0.5	0.2	0.1	0.1	100.2
1-Aug	0.4	8.0	22.1	26.9	20.1	15.1	4.0	1.6	0.8	0.4	0.1	0.6	100.1
2-Aug	0.4	9.6	24.0	25.1	19.8	13.5	3.9	1.1	0.7	0.5	0.2	1.2	100.0
3-Aug	0.3	5.9	19.9	26.1	21.5	16.5	4.5	1.9	0.6	0.5	0.2	2.1	100.0
4-Aug	0.4	4.5	16.7	25.6	22.8	17.7	5.5	2.4	1.6	1.0	0.6	1.2	100.0
5-Aug	0.4	5.2	17.0	24.9	21.3	18.2	7.1	2.8	1.5	1.0	0.3	0.3	100.0
6-Aug	0.8	5.7	18.2	25.0	23.3	16.4	5.0	2.9	1.2	0.8	0.4	0.3	100.0
7-Aug	0.5	5.2	18.3	25.8	21.9	17.5	6.5	2.3	0.5	0.4	0.6	0.5	100.0
8-Aug	0.4	4.0	15.6	24.2	23.4	18.8	7.5	3.3	0.9	0.7	0.4	0.9	100.1
9-Aug	0.3	5.0	19.1	24.2	21.7	17.9	6.3	3.5	1.0	0.6	0.2	0.3	100.1
10-Aug	0.3	5.4	20.1	28.0	21.2	13.9	6.0	2.4	1.2	0.8	0.3	0.5	100.1
11-Aug	31.2	28.3	20.0	10.3	5.3	3.1	0.8	0.7	0.1	0.1	0.1	0.0	100.0
12-Aug	22.4	32.8	28.7	12.5	2.9	0.4	0.2	0.0	0.0	0.0	0.0	0.1	100.0
Total	2.4	7.5	20.0	24.4	19.0	13.6	5.3	3.0	1.8	1.2	0.6	1.0	99.8

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